

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural  
Resources Department

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	NRM2025332771
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party XTO Energy	OGRID 5380
Contact Name Kyle Littrell	Contact Telephone 432-221-7331
Contact email Kyle_Littrell@xtoenergy.com	Incident # (assigned by OCD)
Contact mailing address 522 W. Mermod, Carlsbad, NM 88220	

### Location of Release Source

Latitude 32.34642 Longitude -103.83271  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name JRU 105	Site Type Pipeline
Date Release Discovered 8/22/2020	API# (if applicable)

Unit Letter	Section	Township	Range	County
J	36	22S	30E	Eddy

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 4.79	Volume Recovered (bbls) 0.52
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 32.06	Volume Recovered (bbls) 3.48
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release LO discovered a corroded flow line leak from the JRU 105 well. Line was immediately isolated and vacuum truck was dispatched to recover standing fluids. A third-party contractor has been retained for remediation activities.

Form C-141

State of New Mexico  
Oil Conservation Division


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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? A release greater than or equal to 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Kyle Littrell to Venegas, Victoria, EMNRD; Hamlet, Robert, EMNRD; Bratcher, Mike, EMNRD; 'Griswold, Jim, EMNRD' on Sunday, August 23, 2020 12:14 PM via email.	

**Initial Response**

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Kyle Littrell</u>	Title: <u>SH&amp;E Supervisor</u>
Signature: 	Date: <u>9-3-20</u>
email: <u>Kyle.Littrell@xtoenergy.com</u>	Telephone: <u>432-221-7331</u>
<b>OCD Only</b>  Received by: <u>Ramona Marcus</u> Date: <u>9/9/2020</u>	

NRM2025332771

<b>Location:</b>	<b>JRU 105</b>	
<b>Spill Date:</b>	<b>8/22/2020</b>	
<b>Area 1</b>		
Approximate Area =	651.00	sq. ft.
Average Saturation (or depth) of spill =	17.00	inches
Average Porosity Factor =	0.20	
<b>VOLUME OF LEAK</b>		
Total Crude Oil =	4.79	bbls
Total Produced Water =	32.06	bbls

<b>TOTAL VOLUME OF LEAK</b>		
Total Crude Oil =	4.79	bbls
Total Produced Water =	32.06	bbls
<b>TOTAL VOLUME RECOVERED</b>		
Total Crude Oil =	0.52	bbls
Total Produced Water =	3.48	bbls

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## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&gt;100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

### **Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature:  Date: 03/08/2021

email: Kyle Littrell@xtoenergy.com Telephone: (432)-221-7331

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kyle Littrell Title: SH&E Supervisor

Signature: 

Date: 03/08/2021

email: Kyle\_Littrell@xtoenergy.com

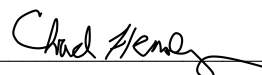
Telephone: 432-221-7331

### OCD Only

Received by: Chad Hensley

Date: 04/13/2021

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 04/13/2021

Printed Name: Chad Hensley

Title: Environmental Specialist Advanced



WSP USA

3300 North "A" Street  
Building 1, Unit 222  
Midland, Texas 79705  
432.704.5178

March 8, 2021

District II  
New Mexico Oil Conservation Division  
811 South First Street  
Artesia, New Mexico 88210

**RE: Closure Request  
JRU 105  
Incident Number NRM2025332771  
Eddy County, New Mexico**

To Whom it May Concern:

WSP USA Inc. (WSP) on behalf of XTO Energy, Inc. (XTO), presents the following Closure Request detailing site assessment, soil sampling, and excavation activities at the JRU 105 (Site) in Unit J, Section 36, Township 22 South, Range 30 East, in Eddy County, New Mexico (Figure 1). The purpose of the site assessment, soil sampling, and excavation activities was to address impacts to soil following a release of crude oil and produced water at the Site. Based on the excavation activities and results of the soil sampling events, XTO is submitting this Closure Request, describing remediation that has occurred and requesting no further action (NFA) for Incident Number NRM2025332771.

## **RELEASE BACKGROUND**

On August 22, 2020, a corroded flow line was discovered, resulting in the release of 4.79 barrels (bbls) of crude oil and 32.06 bbls of produced water onto the surface of the lease road around the pad and into the adjacent pasture area. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 0.52 bbls of crude oil and 3.48 bbls of produced water were recovered. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Form C-141 on September 3, 2020 and was assigned Incident Number NRM2025332771.

## **SITE CHARACTERIZATION**

WSP characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is United States Geological Survey (USGS) well 321946103492001, located approximately 1.16 miles southeast of the Site. The groundwater well was most recently measured in February 1959 has a reported depth to groundwater of 145 feet





bgs and a total depth of 180 feet bgs. Ground surface elevation at the groundwater well location is 3,305 feet above mean sea level (amsl), which is approximately 1 foot higher in elevation than the Site. The next closest permitted groundwater well with depth to groundwater data is NMOSE well C-02111, located approximately 2.78 miles northwest of the Site. The groundwater well has a reported depth to groundwater of 155 feet bgs and a total depth of 700 feet bgs. Ground surface elevation at the groundwater well location is 3,175 feet amsl, which is approximately 129 feet lower in elevation than the Site. All wells used for depth to groundwater determination are depicted on Figure 1. The referenced well records are included in Attachment 1. There are no regional or Site-specific hydrological conditions, such as shallow surface water, karst features, wetlands, or vegetation that suggest the Site is conducive to shallow groundwater.

During January 2020, in an effort to confirm the depth to groundwater in the area, WSP installed a soil boring within 0.5 miles of the Site utilizing a truck-mounted sonic drill rig. Soil boring BH01 was drilled to a depth of 110 feet bgs. The location of the borehole is approximately 0.15 miles west of the site and is depicted on Figure 1. A WSP geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The borehole lithologic/soil sampling log is included in Attachment 1. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 110 feet. The borehole was properly abandoned with hydrated bentonite chips.

The closest continuously flowing or significant watercourse to the Site is an intermittent stream, located approximately 6,121 feet southwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

## **CLOSURE CRITERIA**

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg





A reclamation closure criteria of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top 4 feet the pasture area that was impacted by the release, per NMAC 19.15.29.13.D (1) for the top 4 feet of areas that will be reclaimed following remediation.

#### **SITE ASSESSMENT ACTIVITIES AND ANALYTICAL RESULTS**

On September 30, 2020, WSP personnel visited the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. WSP personnel collected three preliminary assessment soil samples (SS01 through SS03) within the release extent from a depth of approximately 0.5 feet bgs to assess the lateral extent of the impacted soil. The preliminary soil samples were field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2.

The preliminary soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Xenco Laboratories (Xenco) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for preliminary soil samples SS01 through SS03 indicated that BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations exceeded the Closure Criteria and/or the reclamation criteria. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the preliminary soil samples, excavation activities were warranted.

#### **EXCAVATION SOIL SAMPLING ACTIVITIES**

After obtaining Right of Entry Permit from the New Mexico State Land Office, WSP personnel returned to the Site between February 2, 2021 and February 17, 2021 to oversee site assessment and excavation activities.

Impacted soil was excavated from the release area as indicated by visible staining, field screening activities, and laboratory analytical results for the preliminary soil samples. Excavation activities were performed using track-mounted backhoe, transport vehicle, and hydrovac. The excavation occurred in the pasture area west of the pad and in the lease road. To direct excavation activities, WSP screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Photographic documentation is included in Attachment 2.



Following removal of impacted soil, WSP collected 5-point composite soil samples at least every 200 square feet from the sidewalls and floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS04, FS01A, and FS02A were collected from the floor of the excavation from depths ranging from 1 foot bgs to 8 feet bgs. Composite soil samples SW01 through SW04 were collected from the sidewalls of the excavation from depths ranging from the ground surface to 8 feet bgs. The excavation soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and final excavation soil sample locations are presented on Figure 3.

The excavation area measured approximately 750 square feet. A total of approximately 135 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at the R360 Facility in Hobbs, New Mexico. After completion of confirmation sampling, the excavation areas were secured with fencing.

### **SOIL ANALYTICAL RESULTS**

Laboratory analytical results for preliminary soil samples SS01 through SS03 indicated that BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations exceeded the Closure Criteria and/or the reclamation criteria. Based on laboratory analytical results for the preliminary soil samples, excavation activities were completed.

Laboratory analytical results for excavation soil samples FS01A, FS02A, FS03, FS04 and SW01 through SW04, collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria and reclamation criteria. Excavation floor samples FS01 and FS02, collected at 4 feet bgs, initially exceeded the Closure Criteria for TPH-GRO/TPH-DRO. Additional soil was removed from these areas and subsequent floor samples FS01A and FS02A, collected at 8 feet bgs from the final excavation extent, were compliant with the Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Attachment 4.

### **CLOSURE REQUEST**

Site assessment and excavation activities were conducted at the Site to address the August 22, 2020 release of crude oil or produced water. Laboratory analytical results for excavation soil samples, collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria. Additionally, soil samples collected in the pasture from the top four feet of the subsurface were compliant with the reclamation criteria. Based on the soil sample analytical results, no further remediation was required. The excavation was backfilled with material purchased locally and

District II  
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recontoured to match pre-existing site conditions. The disturbed pasture area will be re-seeded with an approved BLM seed mixture.

Initial response efforts which included removal of freestanding fluids via hydrovac and excavation of impacted soil have mitigated impacts at this Site. Depth to groundwater has been determined to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. WSP and XTO believe these remedial actions are protective of human health, the environment, and groundwater. As such, XTO respectfully requests no further action for Incident Number NRM2025332771.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.

Sincerely,

WSP USA Inc.

A handwritten signature in black ink, appearing to read 'Spencer Lo'.

Spencer Lo  
Staff Geologist

A handwritten signature in black ink, appearing to read 'Ashley L. Ager'.

Ashley L. Ager, P.G.  
Managing Director, Geologist

cc: Kyle Littrell, XTO  
Bureau of Land Management

Attachments:

Figure 1	Site Location Map
Figure 2	Preliminary Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Referenced Well Records
Attachment 2	Photographic Log
Attachment 3	Laboratory Analytical Reports

FIGURES



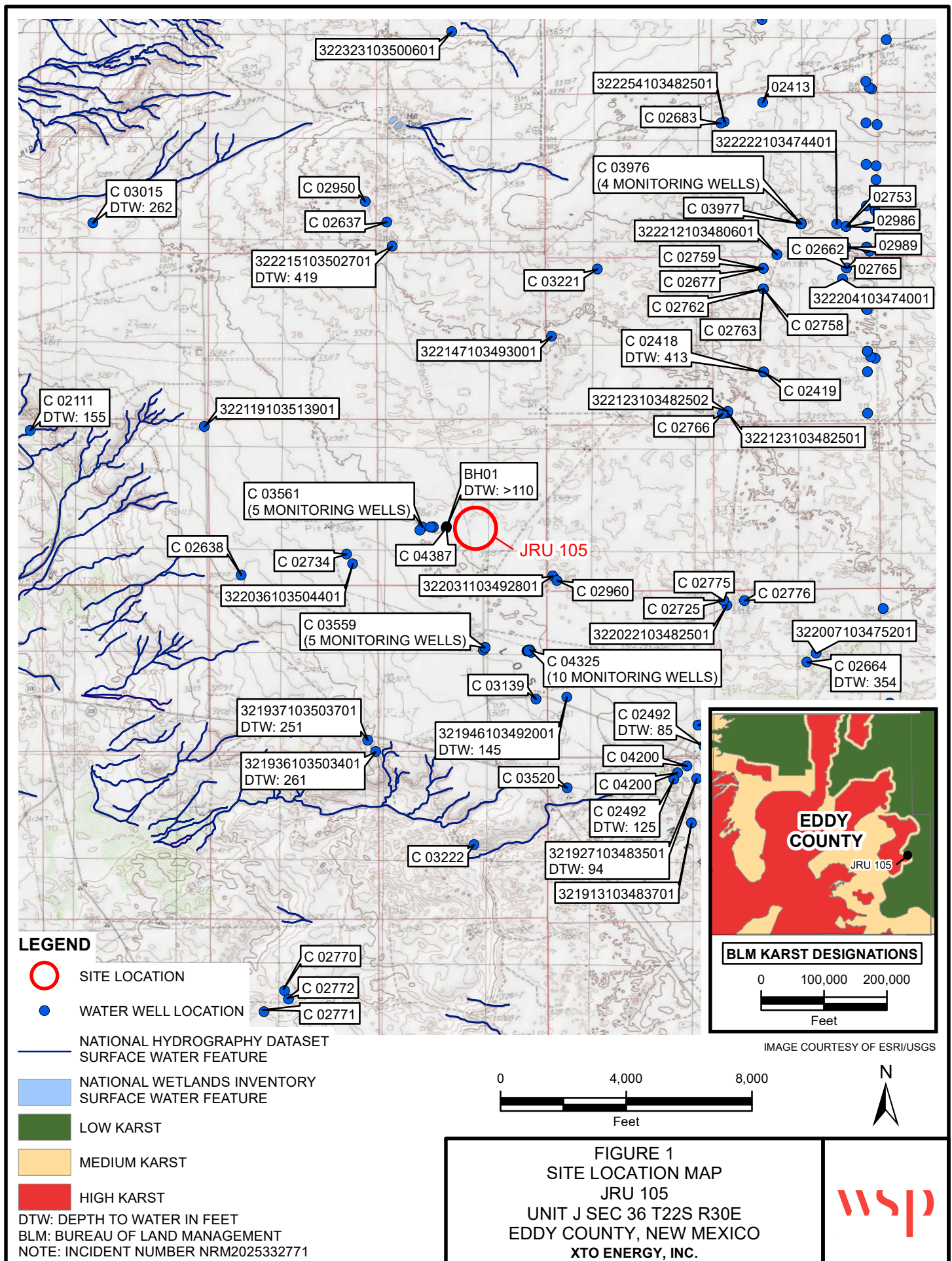






IMAGE COURTESY OF ESRI

**LEGEND**



RELEASE LOCATION



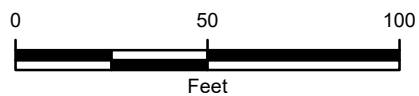
PRELIMINARY SOIL SAMPLE WITH CONCENTRATIONS  
EXCEEDING APPLICABLE CLOSURE CRITERIA



GAS/PIPELINE



RELEASE EXTENT



**FIGURE 2**  
**PRELIMINARY SOIL SAMPLE LOCATIONS**  
JRU 105  
UNIT J SEC 36 T22S R30E  
EDDY COUNTY, NEW MEXICO  
**XTO ENERGY, INC.**



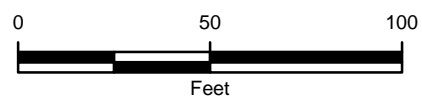
NOTE: INCIDENT NUMBER NRM2025332771

**LEGEND**

- FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- SIDEWALL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

EXCAVATION EXTENT

IMAGE COURTESY OF ESRI



NOTE: INCIDENT NUMBER NRM2025332771  
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

**FIGURE 3**  
**EXCAVATION SOIL SAMPLE LOCATIONS**  
JRJ 105  
UNIT J SEC 36 T22S R30E  
EDDY COUNTY, NEW MEXICO  
**XTO ENERGY, INC.**

**wsp**



TABLES

Table 1

Soil Analytical Results  
 JRU 105  
 Incident Number NRM2025332771  
 Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Surface Samples										
SS01	09/30/2020	0.5	<0.0996	<0.002020	707	8,990	990	9,700	10,700	3,630*
SS02	09/30/2020	0.5	<0.0998	50.5	1,510	7,040	727	8,550	9,280	9,570*
SS03	09/30/2020	0.5	<0.00200	0.0161	465	10,900	1,020	11,400	12,400	24,200*
Excavation Floor Samples										
FS01	02/02/2021	4	<0.100	0.660	51.3	1,720	158	1,771	1,930	180
FS01A	02/17/2021	8	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	207
FS02	02/02/2021	4	<0.100	2.43	106	1,460	131	1,566	1,700	447
FS02A	02/17/2021	8	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	392
FS03	02/04/2021	1	<0.00200	<0.00200	<49.8	<49.8	<49.8	<49.8	<49.8	426*
FS04	02/04/2021	1	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	462*
Excavation Sidewall Samples										
SW01	02/17/2021	0-8	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	13.0*
SW02	02/17/2021	0-8	<0.00202	<0.00202	<50.3	<50.3	<50.3	<50.3	<50.3	13.2*
SW03	02/17/2021	0-8	<0.00202	<0.00202	<50.1	<50.1	<50.1	<50.1	<50.1	19.8*
SW04	02/17/2021	0-8	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	24.9*

## Notes:

ft - feet/foot

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

ORO - motor oil range organics

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

&lt; - indicates result is less than the stated laboratory method practical quantitation limit

NE - Not Established


**BOLD** - indicates results exceed the higher of the background sample result or applicable regulatory standard

Greyed data represents samples that were excavated

\* - indicates sample was collected in area to be reclaimed after remediation is complete;

closure criteria for chloride concentration in the top 4 feet of soil is 600 mg/kg

ATTACHMENT 1: REFERENCED WELL RECORD

 <p><b>LT Environmental, Inc.</b> 508 West Stevens Street Carlsbad, New Mexico 88220</p> <p>Compliance · Engineering · Remediation</p>		Identifier: BH01	Date: 1/18-1/21/20					
		Project Name: JRU 29	RP Number: 2RP-3302, 2RP-3726, 2RP-4040, 2RP-3082					
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>		Logged By: BB, FS, WM	Method: Sonic Drill					
Lat/Long:		Field Screening: NA	Hole Diameter: 6"					
Total Depth: 110'								
Comments: No field screenings, lithology remarks only								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Depth	Soil/Rock Type	Lithology/Remarks
D			N		0'	0'	CCHE	CALICHE, tan-off white, fill
					0.5'	0.5'	SP	SAND, dry, reddish brown, poorly graded, fine-very fine, soft no odor, no stain
D			N		5'	5'	CCHE	CALICHE, dry, tan-off white, few subangular gravel, trace fine sand, no odor, no stain
D			N		12.5'	12.5'	SP-SM	silty SAND, dry, reddish brown, poorly graded, fine grained, few tan-off white subangular gravel, no stain, no odor
D			N		23'	23'	ML-S	SILTSTONE, dry, reddish brown, moderately consolidated, 2mm caliche inclusions, trace off-white subangular gravel, no stain, no odor
D			N		37'	37'		moist
M			N		45'	45'		dry
D			N		58'	58'	CL-S	CLAYSTONE, dry, reddish brown, low plasticity, cohesive, well consolidated with some silty dolomite inclusions (1-2mm), no stain, no odor
D			N		102'	102'		moist
D			N		110'	110'		Total Depth 110 feet bgs

**USGS 321946103492001 23S.31E.06.312333****Available data for this site****Well Site****DESCRIPTION:**

Latitude 32°19'53.3", Longitude 103°49'24.8" NAD83

Eddy County, New Mexico , Hydrologic Unit 13060011

Well depth: 180 feet

Land surface altitude: 3,305.00 feet above NGVD29.

Well completed in "Other aquifers" (N9999OTHER) national aquifer.

Well completed in "Chinle Formation" (231CHNL) local aquifer

**AVAILABLE DATA:**

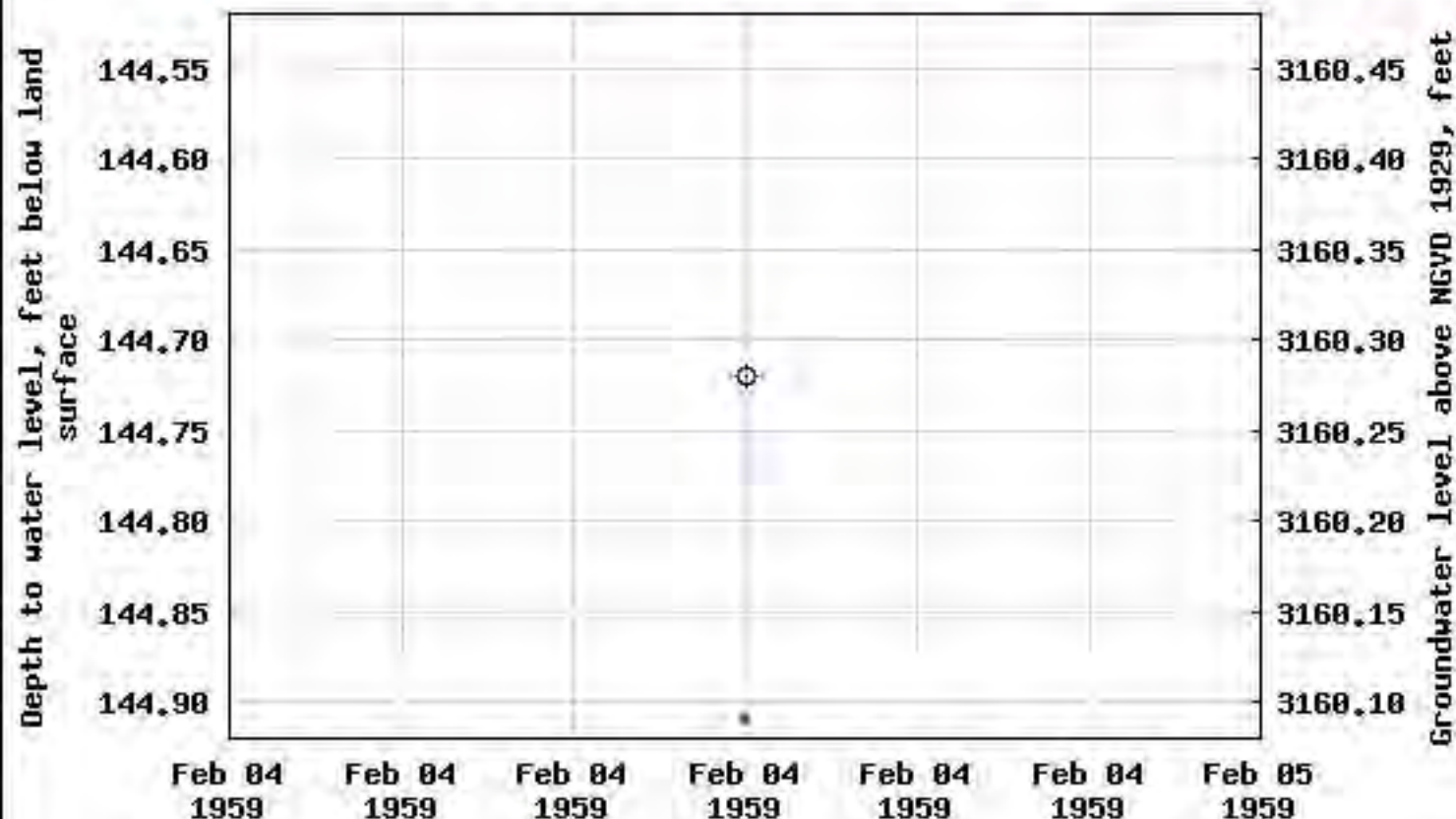
<b>Data Type</b>	<b>Begin Date</b>	<b>End Date</b>	<b>Count</b>
<a href="#">Field groundwater-level measurements</a>	1959-02-04	1959-02-04	3
<a href="#">Revisions</a>	Unavailable (site:0) (timeseries:0)		

**OPERATION:**

Record for this site is maintained by the USGS New Mexico Water Science Center

Email questions about this site to [New Mexico Water Science Center Water-Data  
Inquiries](#)

USGS 321946103492001 23S.31E.06.312333





# New Mexico Office of the State Engineer

## Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)  
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
C	02111	2	2	2	33	22S	30E	605505	3580336*

**Driller License:** **Driller Company:**  
**Driller Name:** WINSTON BROS.  
**Drill Start Date:** **Drill Finish Date:** 11/30/1962 **Plug Date:**  
**Log File Date:** **PCW Rcv Date:** **Source:** Shallow  
**Pump Type:** **Pipe Discharge Size:** **Estimated Yield:** 29 GPM  
**Casing Size:** 8.75 **Depth Well:** 248 feet **Depth Water:** 155 feet

**Meter Number:** 552 **Meter Make:** SENSUS  
**Meter Serial Number:** 1480245 **Meter Multiplier:** 100.0000  
**Number of Dials:** 5 **Meter Type:** Diversion  
**Unit of Measure:** Gallons **Return Flow Percent:**  
**Usage Multiplier:** **Reading Frequency:**

### Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount Online
12/31/1998	1999	3519	A	ms		0
06/30/1999	1999	10119	A	ms		2.025
09/30/1999	1999	17046	A	ms		2.126
01/12/2000	1999	23122	A	ms		1.865
03/31/2000	2000	29277	A	mb		1.889
06/30/2000	2000	38063	A	RPT		2.696
09/30/2000	2000	45705	A	RPT		2.345
12/31/2000	2000	53709	A	RPT		2.456
03/31/2001	2001	61935	A	RPT		2.524
06/30/2001	2001	63804	A	RPT		0.574
10/01/2001	2001	63804	A	RPT		0
01/01/2002	2001	3924	R	RPT	Meter Rollover	12.312
04/23/2002	2002	12315	A	RPT		2.575
07/01/2002	2002	12571	A	rm		0.079
01/01/2003	2002	14740	A	RPT		0.666
01/01/2004	2003	14740	A	ab		0
04/01/2004	2004	14740	A	RPT		0
10/30/2004	2004	14740	A	RPT		0
03/31/2005	2005	14740	A	RPT		0
10/30/2005	2005	14740	A	RPT		0
12/31/2005	2005	14740	A	RPT		0
07/07/2006	2006	14740	A	tw		0
11/01/2006	2006	14740	A	RPT		0
06/30/2007	2007	14740	A	RPT		0
09/30/2007	2007	14740	A	RPT		0



12/31/2007	2007	14740	A	RPT	0
03/31/2008	2008	14740	A	RPT	0
06/30/2008	2008	14740	A	RPT	0
09/30/2008	2008	14740	A	RPT	0
12/31/2008	2008	14740	A	RPT	0
03/31/2009	2009	14740	A	RPT	0
06/30/2009	2009	14740	A	RPT	0
09/30/2009	2009	14740	A	RPT	0
03/31/2010	2010	14740	A	tw	0
07/09/2010	2010	14740	A	RPT	0
10/01/2010	2010	14740	A	RPT	0
12/31/2010	2010	14740	A	RPT	0
03/30/2011	2011	14740	A	tw	0
06/30/2011	2011	14740	A	RPT	0
01/09/2012	2011	14740	A	RPT	0
03/31/2012	2012	14740	A	RPT	0
07/03/2012	2012	14740	A	RPT	0
01/10/2013	2012	14740	A	RPT	0
04/08/2013	2013	14740	A	RPT	0
07/11/2013	2013	14740	A	RPT	0

x

**YTD Meter Amounts:	Year	Amount
	1999	6.016
	2000	9.386
	2001	15.410
	2002	3.320
	2003	0
	2004	0
	2005	0
	2006	0
	2007	0
	2008	0
	2009	0
	2010	0
	2011	0
	2012	0
	2013	0

x

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.


POINT OF DIVERSION SUMMARY


ATTACHMENT 2: PHOTOGRAPHIC LOG



## PHOTOGRAPHIC LOG

<b>XTO</b>	<b>JRU 105</b> <b>Eddy County, NM</b>	<b>TE012920138</b>
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<b>Photo No.</b>	<b>Date</b>	
1	August 8, 2020- February 17, 2021	
Northern view of stained area.		

<b>Photo No.</b>	<b>Date</b>	
2	August 8, 2020- February 17, 2021	
Western view of stained road area.		





## PHOTOGRAPHIC LOG

XTO

JRU 105  
Eddy County, NM

TE012920138


Photo No.	Date	
3	August 8, 2020- February 17, 2021	
Southern view of stained area.		

Photo No.	Date	
4	August 8, 2020- February 17, 2021	
Western view of road excavation.		





## PHOTOGRAPHIC LOG

XTO	JRU 105 Eddy County, NM	TE012920138
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Photo No.	Date	
5	August 8, 2020- February 17, 2021	
Western view of backfilled road area.		 A photograph showing a wide, unpaved dirt road in a desert environment. The road surface is uneven and shows signs of being backfilled or recently graded. In the background, there are utility poles and a clear blue sky.


Photo No.	Date	
6	August 8, 2020- February 17, 2021	
Northern view of excavation in pasture area.		 A photograph showing a large, deep excavation pit in a dry, sandy area. A yellow excavator is visible in the background, having just finished or in the process of digging the pit. The surrounding area is sparse with dry vegetation.






## PHOTOGRAPHIC LOG

<b>XTO</b>	<b>JRU 105</b> <b>Eddy County, NM</b>	<b>TE012920138</b>
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<b>Photo No.</b>	<b>Date</b>	
7	August 8, 2020- February 17, 2021	
Western view of excavation in pasture area.		 A photograph showing a deep, rectangular excavation in a dry, sandy area. Two large black pipes run horizontally across the foreground. In the background, there are sparse bushes and a clear blue sky with some clouds. A yellow excavator is partially visible on the right side of the frame.

<b>Photo No.</b>	<b>Date</b>	
8	August 8, 2020- February 17, 2021	
Northern view of backfilled pasture area.		 A photograph showing a wide, flat area of reddish-brown soil, likely a backfilled pasture. A yellow backhoe loader is parked in the middle ground. A large black pipe runs along the left side of the frame. The sky is overcast with grey clouds.

ATTACHMENT 3: LABORATORY ANALYTICAL RESULTS



## Certificate of Analysis Summary 674001

LT Environmental, Inc., Arvada, CO

Project Name: JRU 105

Project Id: 012920138

Contact: Dan Moir

Project Location: Eddy County

Date Received in Lab: Wed 09.30.2020 15:20

Report Date: 10.02.2020 14:17

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	674001-001	674001-002	674001-003			
	<b>Field Id:</b>	SS01	SS02	SS03			
	<b>Depth:</b>	0.5- ft	0.5- ft	0.5- ft			
	<b>Matrix:</b>	SOIL	SOIL	SOIL			
	<b>Sampled:</b>	09.30.2020 10:50	09.30.2020 10:55	09.30.2020 11:00			
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	09.30.2020 17:15	09.30.2020 17:15	09.30.2020 17:15			
	<b>Analyzed:</b>	10.01.2020 09:15	10.01.2020 09:37	10.01.2020 08:52			
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.0996 0.0996	<0.0998 0.0998	<0.00200 0.00200			
Toluene		0.898 0.398	7.36 0.399	<0.00200 0.00200			
Ethylbenzene		2.42 0.398	8.46 0.399	<0.00200 0.00200			
m,p-Xylenes		5.27 0.797	23.5 0.798	0.0107 0.00399			
o-Xylene		5.16 0.398	11.2 0.399	0.00542 0.00200			
Total Xylenes		10.4 0.398	34.7 0.399	0.0161 0.00200			
Total BTEX		13.7 0.0996	50.5 0.0998	0.0161 0.00200			
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	09.30.2020 17:13	09.30.2020 17:13	09.30.2020 17:13			
	<b>Analyzed:</b>	09.30.2020 20:00	09.30.2020 20:06	09.30.2020 20:11			
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		3630 49.6	9570 200	24200 200			
<b>TPH by SW8015 Mod</b>	<b>Extracted:</b>	09.30.2020 17:30	09.30.2020 17:30	09.30.2020 17:30			
	<b>Analyzed:</b>	10.01.2020 09:01	10.01.2020 09:24	10.01.2020 01:53			
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL			
		mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		707 251	1510 250	465 251			
Diesel Range Organics (DRO)		8990 251	7040 250	10900 251			
Motor Oil Range Hydrocarbons (MRO)		990 251	727 250	1020 251			
Total GRO-DRO		9700 251	8550 250	11400 251			
Total TPH		10700 251	9280 250	12400 251			

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico





# Analytical Report 674001

for

**LT Environmental, Inc.**

**Project Manager: Dan Moir**

**JRU 105**

**012920138**

**10.02.2020**

Collected By: Client

**1089 N Canal Street  
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)  
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)  
Xenco-Carlsbad (LELAP): Louisiana (05092)  
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)  
Xenco-Tampa: Florida (E87429), North Carolina (483)



10.02.2020

Project Manager: **Dan Moir**

**LT Environmental, Inc.**

4600 W. 60th Avenue

Arvada, CO 80003

Reference: Eurofins Xenco, LLC Report No(s): **674001**

**JRU 105**

Project Address: Eddy County

**Dan Moir:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 674001. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 674001 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

**Jessica Kramer**

Project Manager

*A Small Business and Minority Company*

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico



## Sample Cross Reference 674001

LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS01	S	09.30.2020 10:50	0.5 ft	674001-001
SS02	S	09.30.2020 10:55	0.5 ft	674001-002
SS03	S	09.30.2020 11:00	0.5 ft	674001-003



## CASE NARRATIVE

***Client Name: LT Environmental, Inc.***

***Project Name: JRU 105***

Project ID: 012920138  
Work Order Number(s): 674001

Report Date: 10.02.2020  
Date Received: 09.30.2020

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None



# Certificate of Analytical Results 674001

## LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id: **SS01** Matrix: Soil Date Received: 09.30.2020 15:20  
 Lab Sample Id: 674001-001 Date Collected: 09.30.2020 10:50 Sample Depth: 0.5 ft  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: MAB % Moisture:  
 Analyst: MAB Date Prep: 09.30.2020 17:13 Basis: Wet Weight  
 Seq Number: 3138590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3630	49.6	mg/kg	09.30.2020 20:00		5

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DTH % Moisture:  
 Analyst: DTH Date Prep: 09.30.2020 17:30 Basis: Wet Weight  
 Seq Number: 3138563

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	707	251	mg/kg	10.01.2020 09:01		5
Diesel Range Organics (DRO)	C10C28DRO	8990	251	mg/kg	10.01.2020 09:01		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	990	251	mg/kg	10.01.2020 09:01		5
Total GRO-DRO	PHC628	9700	251	mg/kg	10.01.2020 09:01		5
Total TPH	PHC635	10700	251	mg/kg	10.01.2020 09:01		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	10.01.2020 09:01	
o-Terphenyl	84-15-1	98	%	70-135	10.01.2020 09:01	



# Certificate of Analytical Results 674001

## LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id: **SS01**  
Lab Sample Id: 674001-001

Matrix: Soil  
Date Collected: 09.30.2020 10:50

Date Received: 09.30.2020 15:20  
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 09.30.2020 17:15

Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0996	0.0996	mg/kg	10.01.2020 09:15	U	200
<b>Toluene</b>	108-88-3	<b>0.898</b>	0.398	mg/kg	10.01.2020 09:15		200
<b>Ethylbenzene</b>	100-41-4	<b>2.42</b>	0.398	mg/kg	10.01.2020 09:15		200
<b>m,p-Xylenes</b>	179601-23-1	<b>5.27</b>	0.797	mg/kg	10.01.2020 09:15		200
<b>o-Xylene</b>	95-47-6	<b>5.16</b>	0.398	mg/kg	10.01.2020 09:15		200
<b>Total Xylenes</b>	1330-20-7	<b>10.4</b>	0.398	mg/kg	10.01.2020 09:15		200
<b>Total BTEX</b>		<b>13.7</b>	0.0996	mg/kg	10.01.2020 09:15		200
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	120	%	70-130	10.01.2020 09:15		
1,4-Difluorobenzene	540-36-3	97	%	70-130	10.01.2020 09:15		





# Certificate of Analytical Results 674001

## LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id: **SS02** Matrix: Soil Date Received: 09.30.2020 15:20  
 Lab Sample Id: 674001-002 Date Collected: 09.30.2020 10:55 Sample Depth: 0.5 ft  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: MAB % Moisture:  
 Analyst: MAB Date Prep: 09.30.2020 17:13 Basis: Wet Weight  
 Seq Number: 3138590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9570	200	mg/kg	09.30.2020 20:06		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DTH % Moisture:  
 Analyst: DTH Date Prep: 09.30.2020 17:30 Basis: Wet Weight  
 Seq Number: 3138563

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	1510	250	mg/kg	10.01.2020 09:24		5
Diesel Range Organics (DRO)	C10C28DRO	7040	250	mg/kg	10.01.2020 09:24		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	727	250	mg/kg	10.01.2020 09:24		5
Total GRO-DRO	PHC628	8550	250	mg/kg	10.01.2020 09:24		5
Total TPH	PHC635	9280	250	mg/kg	10.01.2020 09:24		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	10.01.2020 09:24	
o-Terphenyl	84-15-1	91	%	70-135	10.01.2020 09:24	



# Certificate of Analytical Results 674001

## LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id: **SS02**  
Lab Sample Id: 674001-002

Matrix: Soil  
Date Collected: 09.30.2020 10:55

Date Received: 09.30.2020 15:20  
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 09.30.2020 17:15

Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0998	0.0998	mg/kg	10.01.2020 09:37	U	200
<b>Toluene</b>	108-88-3	<b>7.36</b>	0.399	mg/kg	10.01.2020 09:37		200
<b>Ethylbenzene</b>	100-41-4	<b>8.46</b>	0.399	mg/kg	10.01.2020 09:37		200
<b>m,p-Xylenes</b>	179601-23-1	<b>23.5</b>	0.798	mg/kg	10.01.2020 09:37		200
<b>o-Xylene</b>	95-47-6	<b>11.2</b>	0.399	mg/kg	10.01.2020 09:37		200
<b>Total Xylenes</b>	1330-20-7	<b>34.7</b>	0.399	mg/kg	10.01.2020 09:37		200
<b>Total BTEX</b>		<b>50.5</b>	0.0998	mg/kg	10.01.2020 09:37		200
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	98	%	70-130	10.01.2020 09:37		
4-Bromofluorobenzene	460-00-4	120	%	70-130	10.01.2020 09:37		



# Certificate of Analytical Results 674001

## LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id: **SS03** Matrix: Soil Date Received: 09.30.2020 15:20  
 Lab Sample Id: 674001-003 Date Collected: 09.30.2020 11:00 Sample Depth: 0.5 ft  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: MAB % Moisture:  
 Analyst: MAB Date Prep: 09.30.2020 17:13 Basis: Wet Weight  
 Seq Number: 3138590

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24200	200	mg/kg	09.30.2020 20:11		20

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P  
 Tech: DTH % Moisture:  
 Analyst: DTH Date Prep: 09.30.2020 17:30 Basis: Wet Weight  
 Seq Number: 3138563

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	465	251	mg/kg	10.01.2020 01:53		5
Diesel Range Organics (DRO)	C10C28DRO	10900	251	mg/kg	10.01.2020 01:53		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	1020	251	mg/kg	10.01.2020 01:53		5
Total GRO-DRO	PHC628	11400	251	mg/kg	10.01.2020 01:53		5
Total TPH	PHC635	12400	251	mg/kg	10.01.2020 01:53		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	10.01.2020 01:53	
o-Terphenyl	84-15-1	111	%	70-135	10.01.2020 01:53	



# Certificate of Analytical Results 674001

## LT Environmental, Inc., Arvada, CO

JRU 105

Sample Id: **SS03**  
Lab Sample Id: 674001-003

Matrix: Soil  
Date Collected: 09.30.2020 11:00

Date Received: 09.30.2020 15:20  
Sample Depth: 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: MAB

% Moisture:

Analyst: MAB

Date Prep: 09.30.2020 17:15

Basis: Wet Weight

Seq Number: 3138585

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	10.01.2020 08:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	10.01.2020 08:52	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	10.01.2020 08:52	U	1
<b>m,p-Xylenes</b>	179601-23-1	<b>0.0107</b>	0.00399	mg/kg	10.01.2020 08:52		1
<b>o-Xylene</b>	95-47-6	<b>0.00542</b>	0.00200	mg/kg	10.01.2020 08:52		1
<b>Total Xylenes</b>	1330-20-7	<b>0.0161</b>	0.00200	mg/kg	10.01.2020 08:52		1
<b>Total BTEX</b>		<b>0.0161</b>	0.00200	mg/kg	10.01.2020 08:52		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	95	%	70-130	10.01.2020 08:52		
4-Bromofluorobenzene	460-00-4	107	%	70-130	10.01.2020 08:52		

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.      **ND** Not Detected.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

**BKS/LCS** Blank Spike/Laboratory Control Sample      **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

**MD/SD** Method Duplicate/Sample Duplicate      **MS** Matrix Spike      **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation





## LT Environmental, Inc.

JRU 105

**Analytical Method: Chloride by EPA 300**

Seq Number: 3138590

MB Sample Id: 7712379-1-BLK

Matrix: Solid

LCS Sample Id: 7712379-1-BKS

Prep Method: E300P

Date Prep: 09.30.2020

LCSD Sample Id: 7712379-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	250	100	250	100	90-110	0	20	mg/kg	09.30.2020 17:32	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3138590

Parent Sample Id: 673902-006

Matrix: Soil

MS Sample Id: 673902-006 S

Prep Method: E300P

Date Prep: 09.30.2020

MSD Sample Id: 673902-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1740	199	1930	95	1930	95	90-110	0	20	mg/kg	09.30.2020 17:49	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3138590

Parent Sample Id: 673902-016

Matrix: Soil

MS Sample Id: 673902-016 S

Prep Method: E300P

Date Prep: 09.30.2020

MSD Sample Id: 673902-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1370	200	1570	100	1570	100	90-110	0	20	mg/kg	09.30.2020 19:05	

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3138563

MB Sample Id: 7712411-1-BLK

Matrix: Solid

LCS Sample Id: 7712411-1-BKS

Prep Method: SW8015P

Date Prep: 09.30.2020

LCSD Sample Id: 7712411-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1040	104	1030	103	70-135	1	35	mg/kg	09.30.2020 22:31	
Diesel Range Organics (DRO)	<50.0	1000	1130	113	1140	114	70-135	1	35	mg/kg	09.30.2020 22:31	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		125		123		70-135	%	09.30.2020 22:31
o-Terphenyl	107		108		111		70-135	%	09.30.2020 22:31

**Analytical Method: TPH by SW8015 Mod**

Seq Number: 3138563

Matrix: Solid

MB Sample Id: 7712411-1-BLK

Prep Method: SW8015P

Date Prep: 09.30.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	09.30.2020 22:10	

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * | (C - E) / (C + E) |$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec



## LT Environmental, Inc.

JRU 105

## Analytical Method: TPH by SW8015 Mod

Seq Number: 3138563

Parent Sample Id: 674011-001

Matrix: Soil

MS Sample Id: 674011-001 S

Prep Method: SW8015P

Date Prep: 09.30.2020

MSD Sample Id: 674011-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.8	996	840	84	868	87	70-135	3	35	mg/kg	09.30.2020 23:31	
Diesel Range Organics (DRO)	<49.8	996	916	92	910	91	70-135	1	35	mg/kg	09.30.2020 23:31	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		126		70-135	%	09.30.2020 23:31
o-Terphenyl	101		98		70-135	%	09.30.2020 23:31

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3138585

MB Sample Id: 7712387-1-BLK

Matrix: Solid

LCS Sample Id: 7712387-1-BKS

Prep Method: SW5035A

Date Prep: 09.30.2020

LCSD Sample Id: 7712387-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0996	100	0.0953	95	70-130	4	35	mg/kg	09.30.2020 23:29	
Toluene	<0.00200	0.100	0.0927	93	0.0879	88	70-130	5	35	mg/kg	09.30.2020 23:29	
Ethylbenzene	<0.00200	0.100	0.0960	96	0.0934	93	71-129	3	35	mg/kg	09.30.2020 23:29	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.187	94	70-135	4	35	mg/kg	09.30.2020 23:29	
o-Xylene	<0.00200	0.100	0.0970	97	0.0943	94	71-133	3	35	mg/kg	09.30.2020 23:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		96		106		70-130	%	09.30.2020 23:29
4-Bromofluorobenzene	118		102		111		70-130	%	09.30.2020 23:29

## Analytical Method: BTEX by EPA 8021B

Seq Number: 3138585

Parent Sample Id: 673902-011

Matrix: Soil

MS Sample Id: 673902-011 S

Prep Method: SW5035A

Date Prep: 09.30.2020

MSD Sample Id: 673902-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.111	110	0.0943	93	70-130	16	35	mg/kg	10.01.2020 00:14	
Toluene	<0.00202	0.101	0.105	104	0.0873	86	70-130	18	35	mg/kg	10.01.2020 00:14	
Ethylbenzene	<0.00202	0.101	0.108	107	0.0894	89	71-129	19	35	mg/kg	10.01.2020 00:14	
m,p-Xylenes	<0.00403	0.202	0.220	109	0.180	90	70-135	20	35	mg/kg	10.01.2020 00:14	
o-Xylene	<0.00202	0.101	0.107	106	0.0886	88	71-133	19	35	mg/kg	10.01.2020 00:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		103		70-130	%	10.01.2020 00:14
4-Bromofluorobenzene	115		115		70-130	%	10.01.2020 00:14

MS/MSD Percent Recovery  
Relative Percent Difference  
LCS/LCSD Recovery  
Log Difference

$[D] = 100 * (C - A) / B$   
 $RPD = 200 * |(C - E) / (C + E)|$   
 $[D] = 100 * (C) / [B]$   
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample  
 A = Parent Result  
 C = MS/LCS Result  
 E = MSD/LCSD Result

MS = Matrix Spike  
 B = Spike Added  
 D = MSD/LCSD % Rec





# Chain of Custody

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
 Midland, TX (432-704-5440) EL Paso, TX (915)585-3443 Lubbock, TX (806)794-1296  
 Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813-620-2000)

Work Order No: 1634001

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Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	LT Environmental, Inc., Permian office	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	522 West Memond
City, State ZIP:	Midland, Tx 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(432) 236-3849	Email:	enaka@ltenv.com, dmoir@ltenv.com
Project Name:	JRU 105	Turn Around	
Project Number:	012920138	Routine	<input checked="" type="checkbox"/>
P.O. Number:		Rush:	
Sampler's Name:	Elizabeth Naka	Due Date:	

<b>SAMPLE RECEIPT</b>		Temp Blank:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Temperature (°C):	14/1.2	Thermometer ID	T-MW-007				
Received Intact:	<input checked="" type="checkbox"/> Yes	Correction Factor:	-0.0				
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Total Containers:	1				
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TPH (EPA)	BTEX (EPA)	Chloride	Sample Comments
SS01	S	09/20/20	1055	0.5'	1	X	X	X	digate
SS02	↓	↓	1055	↓	↓	↓	↓	↓	↓
SS03			1100						
Elapsoat pick									

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Ti Sn U V Zn  
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Relinquished by: (Signature) *Elizabeth Naka* Received by: (Signature) *Chris Carpenter* Date/Time 9.30.20 1520<sup>2</sup>

Relinquished by: (Signature) Received by: (Signature) Date/Time





## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-126-1  
Laboratory Sample Delivery Group: TE012920138  
Client Project/Site: JRU 105

For:  
WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Dan Moir

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
2/9/2021 4:04:12 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: JRU 105

Laboratory Job ID: 890-126-1  
SDG: TE012920138

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

### Job ID: 890-126-1

### Laboratory: Eurofins Xenco, Carlsbad

#### Narrative

#### Job Narrative 890-126-1

#### Receipt

The samples were received on 2/2/2021 5:18 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

#### GC VOA

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 890-123 and analytical batch 890-145 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 890-120 and analytical batch 890-121 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### Subcontract Lab non-Sister Lab

See attached subcontract report.

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

Client Sample ID: FS01

Lab Sample ID: 890-126-1

Date Collected: 02/02/21 10:15

Matrix: Solid

Date Received: 02/02/21 17:18

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.100	U	0.100	mg/Kg		02/04/21 10:03	02/04/21 23:21	1
Ethylbenzene	<0.100	U	0.100	mg/Kg		02/04/21 10:03	02/04/21 23:21	1
Toluene	<0.100	U	0.100	mg/Kg		02/04/21 10:03	02/04/21 23:21	1
<b>Total BTEX</b>	<b>0.660</b>		0.100	mg/Kg		02/04/21 10:03	02/04/21 23:21	1
<b>Xylenes, Total</b>	<b>0.660</b>		0.100	mg/Kg		02/04/21 10:03	02/04/21 23:21	1
<b>m,p-Xylenes</b>	<b>0.489</b>		0.200	mg/Kg		02/04/21 10:03	02/04/21 23:21	1
<b>o-Xylene</b>	<b>0.171</b>		0.100	mg/Kg		02/04/21 10:03	02/04/21 23:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	97		70 - 130	02/04/21 10:03	02/04/21 23:21	1
4-Bromofluorobenzene (Surr)	101		70 - 130	02/04/21 10:03	02/04/21 23:21	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>180</b>	<b>F1</b>	9.94	mg/Kg			02/03/21 07:54	1

## Method: TPH 8015 modified - SW846 8015B TPH ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO)</b>	<b>1720</b>		49.9		mg/kg		02/04/21 11:00	02/04/21 20:49	1
<b>Gasoline Range Hydrocarbons (GRO)</b>	<b>51.3</b>		49.9		mg/kg		02/04/21 11:00	02/04/21 20:49	1
<b>Motor Oil Range Hydrocarbons (MRO)</b>	<b>158</b>		49.9		mg/kg		02/04/21 11:00	02/04/21 20:49	1
<b>Total TPH</b>	<b>1930</b>		49.9		mg/kg		02/04/21 11:00	02/04/21 20:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 135	02/04/21 11:00	02/04/21 20:49	1
o-Terphenyl	186		70 - 135	02/04/21 11:00	02/04/21 20:49	1

Client Sample ID: FS02

Lab Sample ID: 890-126-2

Date Collected: 02/02/21 13:20

Matrix: Solid

Date Received: 02/02/21 17:18

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.100	U	0.100	mg/Kg		02/04/21 10:03	02/05/21 00:16	1
<b>Ethylbenzene</b>	<b>0.292</b>		0.100	mg/Kg		02/04/21 10:03	02/05/21 00:16	1
Toluene	<0.100	U	0.100	mg/Kg		02/04/21 10:03	02/05/21 00:16	1
<b>Total BTEX</b>	<b>2.43</b>		0.100	mg/Kg		02/04/21 10:03	02/05/21 00:16	1
<b>Xylenes, Total</b>	<b>2.13</b>		0.100	mg/Kg		02/04/21 10:03	02/05/21 00:16	1
<b>m,p-Xylenes</b>	<b>1.66</b>		0.200	mg/Kg		02/04/21 10:03	02/05/21 00:16	1
<b>o-Xylene</b>	<b>0.474</b>		0.100	mg/Kg		02/04/21 10:03	02/05/21 00:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	94		70 - 130	02/04/21 10:03	02/05/21 00:16	1
4-Bromofluorobenzene (Surr)	92		70 - 130	02/04/21 10:03	02/05/21 00:16	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>447</b>		10.0	mg/Kg			02/03/21 08:12	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

Client Sample ID: FS02

Lab Sample ID: 890-126-2

Date Collected: 02/02/21 13:20

Matrix: Solid

Date Received: 02/02/21 17:18

## Method: TPH 8015 modified - SW846 8015B TPH ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	1460		50.0		mg/kg		02/08/21 12:00	02/09/21 05:46	1
Gasoline Range Hydrocarbons (GRO)	106		50.0		mg/kg		02/08/21 12:00	02/09/21 05:46	1
Motor Oil Range Hydrocarbons (MRO)	131		50.0		mg/kg		02/08/21 12:00	02/09/21 05:46	1
Total TPH	1700		50.0		mg/kg		02/08/21 12:00	02/09/21 05:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	128		70 - 135				02/08/21 12:00	02/09/21 05:46	1
o-Terphenyl	127		70 - 135				02/08/21 12:00	02/09/21 05:46	1

Eurofins Xenco, Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DFBZ1	BFB1
		(70-130)	(70-130)
890-126-1	FS01	97	101
890-126-2	FS02	94	92
LCS 890-123/2-A	Lab Control Sample	101	96
LCSD 890-123/3-A	Lab Control Sample Dup	101	94
MB 890-123/1-A	Method Blank	104	101

## Surrogate Legend

DFBZ = 1,4-Difluorobenzene

BFB = 4-Bromofluorobenzene (Surr)

## Method: TPH 8015 modified - SW846 8015B TPH ORO

Matrix: Solid

Prep Type: Total/NA

## Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	1CO	OTPH
		(70-135)	(70-135)
890-126-1	FS01	116	186
890-126-2	FS02	128	127

## Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 890-123/1-A

Matrix: Solid

Analysis Batch: 145

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 123

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/04/21 10:03	02/04/21 14:44	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/04/21 10:03	02/04/21 14:44	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/04/21 10:03	02/04/21 14:44	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/04/21 10:03	02/04/21 14:44	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/04/21 10:03	02/04/21 14:44	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		02/04/21 10:03	02/04/21 14:44	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/04/21 10:03	02/04/21 14:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	104		70 - 130	02/04/21 10:03	02/04/21 14:44	1
4-Bromofluorobenzene (Surr)	101		70 - 130	02/04/21 10:03	02/04/21 14:44	1

Lab Sample ID: LCS 890-123/2-A

Matrix: Solid

Analysis Batch: 145

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 123

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.1015		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.09908		mg/Kg		99	71 - 129
Toluene	0.100	0.09841		mg/Kg		98	70 - 130
m,p-Xylenes	0.200	0.1951		mg/Kg		98	70 - 135
o-Xylene	0.100	0.09718		mg/Kg		97	71 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Difluorobenzene	101		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 890-123/3-A

Matrix: Solid

Analysis Batch: 145

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 123

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09578		mg/Kg		96	70 - 130	6	35
Ethylbenzene	0.100	0.09083		mg/Kg		91	71 - 129	9	35
Toluene	0.100	0.09396		mg/Kg		94	70 - 130	5	35
m,p-Xylenes	0.200	0.1803		mg/Kg		90	70 - 135	8	35
o-Xylene	0.100	0.09083		mg/Kg		91	71 - 133	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Difluorobenzene	101		70 - 130
4-Bromofluorobenzene (Surr)	94		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 890-120/1-A

Matrix: Solid

Analysis Batch: 121

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0	mg/Kg			02/03/21 06:18	1

Lab Sample ID: LCS 890-120/2-A

Matrix: Solid

Analysis Batch: 121

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	500	499.0		mg/Kg		100	90 - 110

Lab Sample ID: LCSD 890-120/3-A

Matrix: Solid

Analysis Batch: 121

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	500	491.5		mg/Kg		98	90 - 110	2	20

Lab Sample ID: 890-126-1 MS

Matrix: Solid

Analysis Batch: 121

Client Sample ID: FS01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	180	F1	497	277.6	F1	mg/Kg		20	90 - 110

Lab Sample ID: 890-126-1 MSD

Matrix: Solid

Analysis Batch: 121

Client Sample ID: FS01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	180	F1	501	271.5	F1	mg/Kg		18	90 - 110	2	20

## Method: TPH 8015 modified - SW846 8015B TPH ORO

Lab Sample ID: 7720889-1-BLK

Matrix: SOIL

Analysis Batch: 3150167

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3150167\_P

Analyte	BLANK Result	BLANK Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	U		50		mg/kg		02/04/21 11:00	02/04/21 11:50	1
Gasoline Range Hydrocarbons (GRO)	U		50		mg/kg		02/04/21 11:00	02/04/21 11:50	1
Motor Oil Range Hydrocarbons (MRO)	U		50		mg/kg		02/04/21 11:00	02/04/21 11:50	1

Lab Sample ID: 7720889-1-BKS

Matrix: SOIL

Analysis Batch: 3150167

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3150167\_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics (DRO)	1000	1130		mg/kg		113	70 - 135
Gasoline Range Hydrocarbons (GRO)	1000	870		mg/kg		87	70 - 135

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## Method: TPH 8015 modified - SW846 8015B TPH ORO (Continued)

Lab Sample ID: 7720889-1-BSD

Matrix: SOIL

Analysis Batch: 3150167

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3150167\_P

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO)	1000	1130		mg/kg		113	70 - 135	0	20
Gasoline Range Hydrocarbons (GRO)	1000	870		mg/kg		87	70 - 135	0	20

Lab Sample ID: 7721032-1-BLK

Matrix: SOIL

Analysis Batch: 3150314

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 3150314\_P

Analyte	BLANK Result	BLANK Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO)	U		50		mg/kg		02/08/21 12:00	02/08/21 11:26	1
Gasoline Range Hydrocarbons (GRO)	U		50		mg/kg		02/08/21 12:00	02/08/21 11:26	1
Motor Oil Range Hydrocarbons (MRO)	U		50		mg/kg		02/08/21 12:00	02/08/21 11:26	1

Lab Sample ID: 7721032-1-BKS

Matrix: SOIL

Analysis Batch: 3150314

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 3150314\_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (DRO)	1000	1100		mg/kg		110	70 - 135		
Gasoline Range Hydrocarbons (GRO)	1000	1090		mg/kg		109	70 - 135		

Lab Sample ID: 7721032-1-BSD

Matrix: SOIL

Analysis Batch: 3150314

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 3150314\_P

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO)	1000	1200		mg/kg		120	70 - 135	9	20
Gasoline Range Hydrocarbons (GRO)	1000	1090		mg/kg		109	70 - 135	0	20

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## GC VOA

## Prep Batch: 123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-1	FS01	Total/NA	Solid	5030C	
890-126-2	FS02	Total/NA	Solid	5030C	
MB 890-123/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 890-123/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCSD 890-123/3-A	Lab Control Sample Dup	Total/NA	Solid	5030C	

## Analysis Batch: 145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-1	FS01	Total/NA	Solid	8021B	123
890-126-2	FS02	Total/NA	Solid	8021B	123
MB 890-123/1-A	Method Blank	Total/NA	Solid	8021B	123
LCS 890-123/2-A	Lab Control Sample	Total/NA	Solid	8021B	123
LCSD 890-123/3-A	Lab Control Sample Dup	Total/NA	Solid	8021B	123

## HPLC/IC

## Leach Batch: 120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-1	FS01	Soluble	Solid	DI Leach	
890-126-2	FS02	Soluble	Solid	DI Leach	
MB 890-120/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 890-120/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 890-120/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-126-1 MS	FS01	Soluble	Solid	DI Leach	
890-126-1 MSD	FS01	Soluble	Solid	DI Leach	

## Analysis Batch: 121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-1	FS01	Soluble	Solid	300.0	120
890-126-2	FS02	Soluble	Solid	300.0	120
MB 890-120/1-A	Method Blank	Soluble	Solid	300.0	120
LCS 890-120/2-A	Lab Control Sample	Soluble	Solid	300.0	120
LCSD 890-120/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	120
890-126-1 MS	FS01	Soluble	Solid	300.0	120
890-126-1 MSD	FS01	Soluble	Solid	300.0	120

## Subcontract

## Analysis Batch: 3150167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-1	FS01	Total/NA	Solid	TPH 8015 modified	3150167_P
7720889-1-BLK	Method Blank	Total/NA	SOIL	TPH 8015 modified	3150167_P
7720889-1-BKS	Lab Control Sample	Total/NA	SOIL	TPH 8015 modified	3150167_P
7720889-1-BSD	Lab Control Sample Dup	Total/NA	SOIL	TPH 8015 modified	3150167_P

## Analysis Batch: 3150314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-2	FS02	Total/NA	Solid	TPH 8015 modified	3150314_P

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

## Subcontract (Continued)

## Analysis Batch: 3150314 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
7721032-1-BLK	Method Blank	Total/NA	SOIL	TPH 8015 modified	3150314_P
7721032-1-BKS	Lab Control Sample	Total/NA	SOIL	TPH 8015 modified	3150314_P
7721032-1-BSD	Lab Control Sample Dup	Total/NA	SOIL	TPH 8015 modified	3150314_P

## Prep Batch: 3150167\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-1	FS01	Total/NA	Solid	SW8015P	
7720889-1-BLK	Method Blank	Total/NA	SOIL	***DEFAULT PREP***	
7720889-1-BKS	Lab Control Sample	Total/NA	SOIL	***DEFAULT PREP***	
7720889-1-BSD	Lab Control Sample Dup	Total/NA	SOIL	***DEFAULT PREP***	

## Prep Batch: 3150314\_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-126-2	FS02	Total/NA	Solid	SW8015P	
7721032-1-BLK	Method Blank	Total/NA	SOIL	***DEFAULT PREP***	
7721032-1-BKS	Lab Control Sample	Total/NA	SOIL	***DEFAULT PREP***	
7721032-1-BSD	Lab Control Sample Dup	Total/NA	SOIL	***DEFAULT PREP***	

Eurofins Xenco, Carlsbad



## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

Client Sample ID: FS01

Lab Sample ID: 890-126-1

Date Collected: 02/02/21 10:15

Matrix: Solid

Date Received: 02/02/21 17:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			123	02/04/21 10:03	MC	XC
Total/NA	Analysis	8021B		1	145	02/04/21 23:21	PXS	XC
Soluble	Leach	DI Leach			120	02/02/21 20:04	MC	XC
Soluble	Analysis	300.0		1	121	02/03/21 07:54	A1S	XC
Total/NA	Prep	SW8015P		1	3150167_P	02/04/21 11:00		XM
Total/NA	Analysis	TPH 8015 modified		1	3150167	02/04/21 20:49	ARM	XM

Client Sample ID: FS02

Lab Sample ID: 890-126-2

Date Collected: 02/02/21 13:20

Matrix: Solid

Date Received: 02/02/21 17:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			123	02/04/21 10:03	MC	XC
Total/NA	Analysis	8021B		1	145	02/05/21 00:16	PXS	XC
Soluble	Leach	DI Leach			120	02/02/21 20:04	MC	XC
Soluble	Analysis	300.0		1	121	02/03/21 08:12	A1S	XC
Total/NA	Prep	SW8015P		1	3150314_P	02/08/21 12:00		XM
Total/NA	Analysis	TPH 8015 modified		1	3150314	02/09/21 05:46	ARM	XM

## Laboratory References:

XC = Eurofins Xenco, Carlsbad, 1089 N Canal St., Carlsbad, NM 88220, TEL (575)988-3199

XM = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

## Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

### Laboratory: Eurofins Xenco, Carlsbad

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	05092	06-30-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8021B	5030C	Solid	Total BTEX

### Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

Eurofins Xenco, Carlsbad

## Method Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XC
300.0	Anions, Ion Chromatography	MCAWW	XC
8015B	SW846 8015B TPH ORO	SW846	XM
5030C	Purge and Trap	SW846	XC
DI Leach	Deionized Water Leaching Procedure	ASTM	XC

### Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

XC = Eurofins Xenco, Carlsbad, 1089 N Canal St., Carlsbad, NM 88220, TEL (575)988-3199

XM = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Eurofins Xenco, Carlsbad

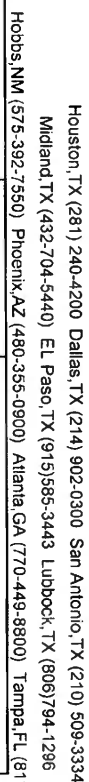
Sample Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-126-1  
SDG: TE012920138

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
890-126-1	FS01	Solid	02/02/21 10:15	02/02/21 17:18	
890-126-2	FS02	Solid	02/02/21 13:20	02/02/21 17:18	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



## Chain of Custody

W/O

890-126 Chain of Custody

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Litrell
Company Name:	WSP	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(303) 887-2946	Email:	Spencer.Lo@wsp.com, Kalei.Jennings@wsp.com, Dan.Moir@wsp.com

<b>Work Order Comments</b>			
Program: UST/PST	<input type="checkbox"/> PRP	<input type="checkbox"/> Brownfields	<input type="checkbox"/> RC <input type="checkbox"/> Superfund
State of Project:			
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables: EDD	<input type="checkbox"/>	ADaPT	<input type="checkbox"/> Other:

[illegible]

Total	200.7 / 6010	200.8 / 6020:
8RCRA	13PPM	Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
TCLP / SPLP 6010:	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
Circle Method(s) and Metal(s) to be analyzed		1631 / 245.1 / 7470 / 7471 : Hg

**Notice:** Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xeno will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xeno. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	2-2-21 1643			



## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-126-1

SDG Number: TE012920138

Login Number: 126

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-146-1  
Laboratory Sample Delivery Group: TE012920138  
Client Project/Site: JRU 105

For:  
WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Dan Moir

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
2/11/2021 10:06:25 AM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: JRU 105

Laboratory Job ID: 890-146-1  
SDG: TE012920138

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

## GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

Job ID: 890-146-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative  
890-146-1

**Receipt**  
The samples were received on 2/4/2021 3:30 PM; the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

**GC VOA**  
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**GC Semi VOA**  
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**HPLC/IC**  
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

Client Sample ID: FS03

Lab Sample ID: 890-146-1

Date Collected: 02/04/21 13:25

Matrix: Solid

Date Received: 02/04/21 15:30

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 10:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 10:40	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 10:40	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 10:40	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 10:40	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		02/05/21 08:18	02/06/21 10:40	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 10:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	105		70 - 130	02/05/21 08:18	02/06/21 10:40	1
4-Bromofluorobenzene (Surr)	103		70 - 130	02/05/21 08:18	02/06/21 10:40	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<49.8	U	49.8	mg/Kg		02/09/21 08:19	02/09/21 17:02	1
Total TPH	<49.8	U	49.8	mg/Kg		02/09/21 08:19	02/09/21 17:02	1
>C10-C28	<49.8	U	49.8	mg/Kg		02/09/21 08:19	02/09/21 17:02	1
>C28-C35	<49.8	U	49.8	mg/Kg		02/09/21 08:19	02/09/21 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 135	02/09/21 08:19	02/09/21 17:02	1
o-Terphenyl	95		70 - 135	02/09/21 08:19	02/09/21 17:02	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	426		10.1	mg/Kg			02/05/21 19:46	1

Client Sample ID: FS04

Lab Sample ID: 890-146-2

Date Collected: 02/04/21 13:35

Matrix: Solid

Date Received: 02/04/21 15:30

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 11:02	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 11:02	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 11:02	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 11:02	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 11:02	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		02/05/21 08:18	02/06/21 11:02	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 11:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	103		70 - 130	02/05/21 08:18	02/06/21 11:02	1
4-Bromofluorobenzene (Surr)	105		70 - 130	02/05/21 08:18	02/06/21 11:02	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 17:23	1
Total TPH	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 17:23	1
>C10-C28	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 17:23	1
>C28-C35	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 17:23	1

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## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

Client Sample ID: FS04

Lab Sample ID: 890-146-2

Date Collected: 02/04/21 13:35

Matrix: Solid

Date Received: 02/04/21 15:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 135	02/09/21 08:19	02/09/21 17:23	1
o-Terphenyl	93		70 - 135	02/09/21 08:19	02/09/21 17:23	1

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	462		9.94	mg/Kg			02/05/21 19:52	1	

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DFBZ1 (70-130)	BFB1 (70-130)
890-145-A-41-E MS	Matrix Spike	101	103
890-145-A-41-F MSD	Matrix Spike Duplicate	99	106
890-146-1	FS03	105	103
890-146-2	FS04	103	105
LCS 890-159/2-A	Lab Control Sample	94	101
LCSD 890-159/3-A	Lab Control Sample Dup	98	99
MB 890-159/1-A	Method Blank	103	99
<b>Surrogate Legend</b>			
DFBZ = 1,4-Difluorobenzene			
BFB = 4-Bromofluorobenzene (Surr)			

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-135)	OTPH1 (70-135)
890-146-1	FS03	98	95
890-146-2	FS04	96	93
890-158-A-1-O MS	Matrix Spike	113	102
890-158-A-1-P MSD	Matrix Spike Duplicate	114	102
LCS 890-214/2-A	Lab Control Sample	108	98
LCSD 890-214/3-A	Lab Control Sample Dup	101	91
MB 890-214/1-A	Method Blank	91	89
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 890-159/1-A

Matrix: Solid

Analysis Batch: 164

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 159

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 08:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 08:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 08:25	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 08:25	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 08:25	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		02/05/21 08:18	02/06/21 08:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/05/21 08:18	02/06/21 08:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	103		70 - 130	02/05/21 08:18	02/06/21 08:25	1
4-Bromofluorobenzene (Surr)	99		70 - 130	02/05/21 08:18	02/06/21 08:25	1

Lab Sample ID: LCS 890-159/2-A

Matrix: Solid

Analysis Batch: 164

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 159

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09909		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.09685		mg/Kg		97	71 - 129
Toluene	0.100	0.09924		mg/Kg		99	70 - 130
m,p-Xylenes	0.200	0.1891		mg/Kg		95	70 - 135
o-Xylene	0.100	0.09812		mg/Kg		98	71 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Difluorobenzene	94		70 - 130
4-Bromofluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 890-159/3-A

Matrix: Solid

Analysis Batch: 164

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 159

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09892		mg/Kg		99	70 - 130	0	35
Ethylbenzene	0.100	0.09827		mg/Kg		98	71 - 129	1	35
Toluene	0.100	0.1000		mg/Kg		100	70 - 130	1	35
m,p-Xylenes	0.200	0.1926		mg/Kg		96	70 - 135	2	35
o-Xylene	0.100	0.09808		mg/Kg		98	71 - 133	0	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Difluorobenzene	98		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 890-145-A-41-E MS

Matrix: Solid

Analysis Batch: 164

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 159

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00201	U	0.0998	0.1009		mg/Kg		101	70 - 130

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-145-A-41-E MS

Matrix: Solid

Analysis Batch: 164

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 159

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00201	U F1	0.0998	0.09103		mg/Kg		91	71 - 129
Toluene	<0.00201	U	0.0998	0.09709		mg/Kg		97	70 - 130
m,p-Xylenes	<0.00402	U F1	0.200	0.1787		mg/Kg		90	70 - 135
o-Xylene	<0.00201	U F1	0.0998	0.09191		mg/Kg		92	71 - 133
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,4-Difluorobenzene	101		70 - 130						
4-Bromofluorobenzene (Surr)	103		70 - 130						

Lab Sample ID: 890-145-A-41-F MSD

Matrix: Solid

Analysis Batch: 164

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 159

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.100	0.08199		mg/Kg		82	70 - 130	21	35
Ethylbenzene	<0.00201	U F1	0.100	0.06664	F1	mg/Kg		67	71 - 129	31	35
Toluene	<0.00201	U	0.100	0.07294		mg/Kg		73	70 - 130	28	35
m,p-Xylenes	<0.00402	U F1	0.200	0.1282	F1	mg/Kg		64	70 - 135	33	35
o-Xylene	<0.00201	U F1	0.100	0.06678	F1	mg/Kg		67	71 - 133	32	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,4-Difluorobenzene	99		70 - 130								
4-Bromofluorobenzene (Surr)	106		70 - 130								

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 890-214/1-A

Matrix: Solid

Analysis Batch: 215

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 214

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 09:29	1
Total TPH	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 09:29	1
>C10-C28	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 09:29	1
>C28-C35	<50.0	U	50.0	mg/Kg		02/09/21 08:19	02/09/21 09:29	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 135			02/09/21 08:19	02/09/21 09:29	1
o-Terphenyl	89		70 - 135			02/09/21 08:19	02/09/21 09:29	1

Lab Sample ID: LCS 890-214/2-A

Matrix: Solid

Analysis Batch: 215

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C10	1000	1016		mg/Kg		102	70 - 135
>C10-C28	1000	1012		mg/Kg		101	70 - 135

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 890-214/2-A

Matrix: Solid

Analysis Batch: 215

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 214

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	108		70 - 135
o-Terphenyl	98		70 - 135

Lab Sample ID: LCSD 890-214/3-A

Matrix: Solid

Analysis Batch: 215

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 214

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C6-C10	1000	969.0		mg/Kg		97	70 - 135	5	25
>C10-C28	1000	977.0		mg/Kg		98	70 - 135	4	25

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 135
o-Terphenyl	91		70 - 135

Lab Sample ID: 890-158-A-1-O MS

Matrix: Solid

Analysis Batch: 215

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 214

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C10	<50.0	U	997	1020		mg/Kg		102	70 - 135
Total TPH	<50.0	U	1990	2033		mg/Kg		0	
>C10-C28	<50.0	U	997	1013		mg/Kg		98	70 - 135

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	113		70 - 135
o-Terphenyl	102		70 - 135

Lab Sample ID: 890-158-A-1-P MSD

Matrix: Solid

Analysis Batch: 215

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 214

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C6-C10	<50.0	U	995	1068		mg/Kg		107	70 - 135	5	35
Total TPH	<50.0	U	1990	2118		mg/Kg		0		NC	
>C10-C28	<50.0	U	995	1050		mg/Kg		102	70 - 135	4	35

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	114		70 - 135
o-Terphenyl	102		70 - 135

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 890-162/1-A

Matrix: Solid

Analysis Batch: 163

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0	mg/Kg			02/05/21 19:12	1

Lab Sample ID: LCS 890-162/2-A

Matrix: Solid

Analysis Batch: 163

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	500	536.2		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 890-162/3-A

Matrix: Solid

Analysis Batch: 163

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	500	533.5		mg/Kg		107	90 - 110	0	20

Lab Sample ID: 890-145-A-41-H MS

Matrix: Solid

Analysis Batch: 163

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3890		504	3903	4	mg/Kg		3	90 - 110

Lab Sample ID: 890-145-A-41-I MSD

Matrix: Solid

Analysis Batch: 163

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3890		496	3845	4	mg/Kg		-9	90 - 110	2	20

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## QC Association Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## GC VOA

## Prep Batch: 159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-146-1	FS03	Total/NA	Solid	5030C	
890-146-2	FS04	Total/NA	Solid	5030C	
MB 890-159/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 890-159/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCSD 890-159/3-A	Lab Control Sample Dup	Total/NA	Solid	5030C	
890-145-A-41-E MS	Matrix Spike	Total/NA	Solid	5030C	
890-145-A-41-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5030C	

## Analysis Batch: 164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-146-1	FS03	Total/NA	Solid	8021B	159
890-146-2	FS04	Total/NA	Solid	8021B	159
MB 890-159/1-A	Method Blank	Total/NA	Solid	8021B	159
LCS 890-159/2-A	Lab Control Sample	Total/NA	Solid	8021B	159
LCSD 890-159/3-A	Lab Control Sample Dup	Total/NA	Solid	8021B	159
890-145-A-41-E MS	Matrix Spike	Total/NA	Solid	8021B	159
890-145-A-41-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	159

## GC Semi VOA

## Prep Batch: 214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-146-1	FS03	Total/NA	Solid	8015NM Prep	
890-146-2	FS04	Total/NA	Solid	8015NM Prep	
MB 890-214/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 890-214/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 890-214/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-158-A-1-O MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-158-A-1-P MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-146-1	FS03	Total/NA	Solid	8015B NM	214
890-146-2	FS04	Total/NA	Solid	8015B NM	214
MB 890-214/1-A	Method Blank	Total/NA	Solid	8015B NM	214
LCS 890-214/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	214
LCSD 890-214/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	214
890-158-A-1-O MS	Matrix Spike	Total/NA	Solid	8015B NM	214
890-158-A-1-P MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	214

## HPLC/IC

## Leach Batch: 162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-146-1	FS03	Soluble	Solid	DI Leach	
890-146-2	FS04	Soluble	Solid	DI Leach	
MB 890-162/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 890-162/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 890-162/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-145-A-41-H MS	Matrix Spike	Soluble	Solid	DI Leach	
890-145-A-41-I MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## HPLC/IC

## Analysis Batch: 163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-146-1	FS03	Soluble	Solid	300.0	162
890-146-2	FS04	Soluble	Solid	300.0	162
MB 890-162/1-A	Method Blank	Soluble	Solid	300.0	162
LCS 890-162/2-A	Lab Control Sample	Soluble	Solid	300.0	162
LCSD 890-162/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	162
890-145-A-41-H MS	Matrix Spike	Soluble	Solid	300.0	162
890-145-A-41-I MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	162

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

## Client Sample ID: FS03

## Lab Sample ID: 890-146-1

Date Collected: 02/04/21 13:25

Matrix: Solid

Date Received: 02/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			159	02/05/21 08:18	MC	XC
Total/NA	Analysis	8021B		1	164	02/06/21 10:40	PXS	XC
Total/NA	Prep	8015NM Prep			214	02/09/21 08:19		XC
Total/NA	Analysis	8015B NM		1	215	02/09/21 17:02	BJH	XC
Soluble	Leach	DI Leach			162	02/05/21 09:06	MC	XC
Soluble	Analysis	300.0		1	163	02/05/21 19:46	A1S	XC

## Client Sample ID: FS04

## Lab Sample ID: 890-146-2

Date Collected: 02/04/21 13:35

Matrix: Solid

Date Received: 02/04/21 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			159	02/05/21 08:18	MC	XC
Total/NA	Analysis	8021B		1	164	02/06/21 11:02	PXS	XC
Total/NA	Prep	8015NM Prep			214	02/09/21 08:19		XC
Total/NA	Analysis	8015B NM		1	215	02/09/21 17:23	BJH	XC
Soluble	Leach	DI Leach			162	02/05/21 09:06	MC	XC
Soluble	Analysis	300.0		1	163	02/05/21 19:52	A1S	XC

## Laboratory References:

XC = Eurofins Xenco, Carlsbad, 1089 N Canal St., Carlsbad, NM 88220, TEL (575)988-3199

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

Laboratory: Eurofins Xenco, Carlsbad

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	05092	06-30-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5030C	Solid	Total BTEX

## Method Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XC
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XC
300.0	Anions, Ion Chromatography	MCAWW	XC
5030C	Purge and Trap	SW846	XC
8015NM Prep	Microextraction	SW846	XC
DI Leach	Deionized Water Leaching Procedure	ASTM	XC

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

XC = Eurofins Xenco, Carlsbad, 1089 N Canal St., Carlsbad, NM 88220, TEL (575)988-3199

Eurofins Xenco, Carlsbad

## Sample Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-146-1  
SDG: TE012920138

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
890-146-1	FS03	Solid	02/04/21 13:25	02/04/21 15:30	
890-146-2	FS04	Solid	02/04/21 13:35	02/04/21 15:30	





Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432-704-5440) El Paso, TX (915)585-3443 Lubbock, TX (806)794-1296  
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 288-3333  
Hobbs, NM (575-352-7550)

## Chain of Custody

Project Manager:	Dan Moir	Bill to: (if different)	Kyle Littlell
Company Name:	WSP	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	(303) 887-2946	Email:	Spencer.Lo@wsp.com, Kaleil.Jennings@wsp.com, Dan.Moir@wsp.com

Work Order Comments	
<b>Program:</b> UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RC <input type="checkbox"/> Superfund <input type="checkbox"/>	
<b>State of Project:</b>	
<b>Reporting Level II</b> <input type="checkbox"/> <b>Level III</b> <input type="checkbox"/> <b>UST/UST</b> <input type="checkbox"/> <b>RRP</b> <input type="checkbox"/> <b>Level IV</b> <input type="checkbox"/>	
<b>Deliverables:</b> EDD <input type="checkbox"/> ADaBT <input type="checkbox"/> Other:	

Project Name:	JRU 105	Turn Around	ANALYSIS REQUEST					Work Order Notes
Project Number:	TE012920138	Routine <input checked="" type="checkbox"/>						Cost Center: 1138991001
P.O. Number:		Rush: <input type="checkbox"/>						Spill Date: 08/22/2020
Sampler's Name:	Spencer Lo	Due Date:						Incident ID: NRM2025332771

SAMPLE RECEIPT		Temp Blank	Yes	No	Wet Ice	Yes	No
Temperature (°C):	3.2/3.0				Thermometer ID		
Received intact:	Yes	No			7-NM-007		
Cooler Custody Seals:	Yes	No			Correction Factor:	-0.2	
Sample Custody Seals:	Yes	No			Total Containers:	2	

Number of Containers

(EPA 8015)

(EPA 0=8021)

(EPA 300.0)

TAT starts the day received by the lab, if received by 4:30pm

[illegible]

Circle Method(s) and Metal(s) to be analyzed	Total 200.7 / 6010	200.8 / 6020:
8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn		
TCLP / SPLP 6010 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7471	Hg

**Notice:** Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75,000 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	2-4-21 1536			

Printed Date: 05/18/2018



## 890-146 Chain of Custody

Page 1 of       
www.xenco.com

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-146-1

SDG Number: TE012920138

**Login Number: 146****List Number: 1****Creator: Clifton, Cloe****List Source: Eurofins Carlsbad**

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-212-1  
Laboratory Sample Delivery Group: TE012920138  
Client Project/Site: JRU 105

For:  
WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Dan Moir

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
2/19/2021 3:26:08 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: JRU 105

Laboratory Job ID: 890-212-1  
SDG: TE012920138

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

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### Job ID: 890-212-1

---

Laboratory: Eurofins Xenco, Carlsbad

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#### Narrative

#### Job Narrative 890-212-1

##### Receipt

The samples were received on 2/17/2021 4:06 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

##### GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

##### GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

##### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Client Sample ID: SW01

Lab Sample ID: 890-212-1

Date Collected: 02/17/21 12:45

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 18:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 18:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 18:42	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		02/18/21 08:49	02/18/21 18:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 18:42	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 18:42	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 18:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	104		70 - 130	02/18/21 08:49	02/18/21 18:42	1
4-Bromofluorobenzene (Surr)	100		70 - 130	02/18/21 08:49	02/18/21 18:42	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 14:43	1
Total TPH	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 14:43	1
>C10-C28	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 14:43	1
>C28-C35	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 14:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 135	02/18/21 10:23	02/18/21 14:43	1
o-Terphenyl	86		70 - 135	02/18/21 10:23	02/18/21 14:43	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.0		9.98	mg/Kg			02/18/21 12:43	1

Client Sample ID: SW02

Lab Sample ID: 890-212-2

Date Collected: 02/17/21 13:00

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:33	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:33	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:33	1
m,p-Xylenes	<0.00403	U	0.00403	mg/Kg		02/18/21 08:49	02/18/21 12:33	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:33	1
Total BTEX	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:33	1
Xylenes, Total	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	108		70 - 130	02/18/21 08:49	02/18/21 12:33	1
4-Bromofluorobenzene (Surr)	91		70 - 130	02/18/21 08:49	02/18/21 12:33	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 15:42	1
Total TPH	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 15:42	1
>C10-C28	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 15:42	1
>C28-C35	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 15:42	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Client Sample ID: SW02

Lab Sample ID: 890-212-2

Date Collected: 02/17/21 13:00

Matrix: Solid

Date Received: 02/17/21 16:06

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 135	02/18/21 10:23	02/18/21 15:42	1
o-Terphenyl	86		70 - 135	02/18/21 10:23	02/18/21 15:42	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.2		9.92	mg/Kg			02/18/21 12:49	1

Client Sample ID: SW03

Lab Sample ID: 890-212-3

Date Collected: 02/17/21 13:15

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:56	1
Ethylbenzene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:56	1
Toluene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:56	1
m,p-Xylenes	<0.00404	U	0.00404	mg/Kg		02/18/21 08:49	02/18/21 12:56	1
o-Xylene	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:56	1
Total BTEX	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:56	1
Xylenes, Total	<0.00202	U	0.00202	mg/Kg		02/18/21 08:49	02/18/21 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	105		70 - 130	02/18/21 08:49	02/18/21 12:56	1
4-Bromofluorobenzene (Surr)	86		70 - 130	02/18/21 08:49	02/18/21 12:56	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.1	U	50.1	mg/Kg		02/18/21 10:23	02/18/21 16:01	1
Total TPH	<50.1	U	50.1	mg/Kg		02/18/21 10:23	02/18/21 16:01	1
>C10-C28	<50.1	U	50.1	mg/Kg		02/18/21 10:23	02/18/21 16:01	1
>C28-C35	<50.1	U	50.1	mg/Kg		02/18/21 10:23	02/18/21 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 135	02/18/21 10:23	02/18/21 16:01	1
o-Terphenyl	89		70 - 135	02/18/21 10:23	02/18/21 16:01	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.8		9.92	mg/Kg			02/18/21 12:54	1

Client Sample ID: SW04

Lab Sample ID: 890-212-4

Date Collected: 02/17/21 13:30

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		02/18/21 08:49	02/18/21 19:10	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		02/18/21 08:49	02/18/21 19:10	1
Toluene	<0.00198	U	0.00198	mg/Kg		02/18/21 08:49	02/18/21 19:10	1
m,p-Xylenes	<0.00396	U	0.00396	mg/Kg		02/18/21 08:49	02/18/21 19:10	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		02/18/21 08:49	02/18/21 19:10	1
Total BTEX	<0.00198	U	0.00198	mg/Kg		02/18/21 08:49	02/18/21 19:10	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Client Sample ID: SW04

Lab Sample ID: 890-212-4

Date Collected: 02/17/21 13:30

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.00198	U	0.00198	mg/Kg		02/18/21 08:49	02/18/21 19:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	101		70 - 130			02/18/21 08:49	02/18/21 19:10	1
4-Bromofluorobenzene (Surr)	83		70 - 130			02/18/21 08:49	02/18/21 19:10	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 16:21	1
Total TPH	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 16:21	1
>C10-C28	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 16:21	1
>C28-C35	<50.3	U	50.3	mg/Kg		02/18/21 10:23	02/18/21 16:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	93		70 - 135			02/18/21 10:23	02/18/21 16:21	1
o-Terphenyl	89		70 - 135			02/18/21 10:23	02/18/21 16:21	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24.9		10.0	mg/Kg			02/18/21 13:11	1

Client Sample ID: FS01A

Lab Sample ID: 890-212-5

Date Collected: 02/17/21 13:45

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 13:41	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	102		70 - 130			02/18/21 08:49	02/18/21 13:41	1
4-Bromofluorobenzene (Surr)	84		70 - 130			02/18/21 08:49	02/18/21 13:41	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 16:40	1
Total TPH	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 16:40	1
>C10-C28	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 16:40	1
>C28-C35	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 16:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 135			02/18/21 10:23	02/18/21 16:40	1
o-Terphenyl	96		70 - 135			02/18/21 10:23	02/18/21 16:40	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Client Sample ID: FS01A

Lab Sample ID: 890-212-5

Date Collected: 02/17/21 13:45

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	207		10.1	mg/Kg			02/18/21 13:17	1

Client Sample ID: FS02A

Lab Sample ID: 890-212-6

Date Collected: 02/17/21 14:00

Matrix: Solid

Date Received: 02/17/21 16:06

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
m,p-Xylenes	<0.00399	U	0.00399	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 14:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	107		70 - 130			02/18/21 08:49	02/18/21 14:25	1
4-Bromofluorobenzene (Surr)	87		70 - 130			02/18/21 08:49	02/18/21 14:25	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<49.8	U	49.8	mg/Kg		02/18/21 10:23	02/18/21 17:19	1
Total TPH	<49.8	U	49.8	mg/Kg		02/18/21 10:23	02/18/21 17:19	1
>C10-C28	<49.8	U	49.8	mg/Kg		02/18/21 10:23	02/18/21 17:19	1
>C28-C35	<49.8	U	49.8	mg/Kg		02/18/21 10:23	02/18/21 17:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	101		70 - 135			02/18/21 10:23	02/18/21 17:19	1
o-Terphenyl	97		70 - 135			02/18/21 10:23	02/18/21 17:19	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	392		10.1	mg/Kg			02/18/21 13:34	1

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## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DFBZ1 (70-130)	BFB1 (70-130)
890-212-1	SW01	104	100
890-212-2	SW02	108	91
890-212-3	SW03	105	86
890-212-4	SW04	101	83
890-212-5	FS01A	102	84
890-212-6	FS02A	107	87
LCS 890-291/2-A	Lab Control Sample	101	81
LCSD 890-291/3-A	Lab Control Sample Dup	97	79
MB 890-291/1-A	Method Blank	106	89
<b>Surrogate Legend</b>			
DFBZ = 1,4-Difluorobenzene			
BFB = 4-Bromofluorobenzene (Surr)			

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-135)	OTPH1 (70-135)
890-212-1	SW01	91	86
890-212-1 MS	SW01	90	82
890-212-1 MSD	SW01	104	94
890-212-2	SW02	89	86
890-212-3	SW03	94	89
890-212-4	SW04	93	89
890-212-5	FS01A	100	96
890-212-6	FS02A	101	97
LCS 890-294/2-A	Lab Control Sample	114	102
LCSD 890-294/3-A	Lab Control Sample Dup	114	104
MB 890-294/1-A	Method Blank	89	85
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 890-291/1-A

Matrix: Solid

Analysis Batch: 292

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 291

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 10:19	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 10:19	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 10:19	1
m,p-Xylenes	<0.00400	U	0.00400	mg/Kg		02/18/21 08:49	02/18/21 10:19	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 10:19	1
Total BTEX	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 10:19	1
Xylenes, Total	<0.00200	U	0.00200	mg/Kg		02/18/21 08:49	02/18/21 10:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene	106		70 - 130	02/18/21 08:49	02/18/21 10:19	1
4-Bromofluorobenzene (Surr)	89		70 - 130	02/18/21 08:49	02/18/21 10:19	1

Lab Sample ID: LCS 890-291/2-A

Matrix: Solid

Analysis Batch: 292

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 291

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08122		mg/Kg		81	70 - 130
Ethylbenzene	0.100	0.08007		mg/Kg		80	71 - 129
Toluene	0.100	0.08298		mg/Kg		83	70 - 130
m,p-Xylenes	0.200	0.1582		mg/Kg		79	70 - 135
o-Xylene	0.100	0.07851		mg/Kg		79	71 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Difluorobenzene	101		70 - 130
4-Bromofluorobenzene (Surr)	81		70 - 130

Lab Sample ID: LCSD 890-291/3-A

Matrix: Solid

Analysis Batch: 292

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 291

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.07724		mg/Kg		77	70 - 130	5	35
Ethylbenzene	0.100	0.07771		mg/Kg		78	71 - 129	3	35
Toluene	0.100	0.08151		mg/Kg		82	70 - 130	2	35
m,p-Xylenes	0.200	0.1526		mg/Kg		76	70 - 135	4	35
o-Xylene	0.100	0.07803		mg/Kg		78	71 - 133	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Difluorobenzene	97		70 - 130
4-Bromofluorobenzene (Surr)	79		70 - 130

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 890-294/1-A

Matrix: Solid

Analysis Batch: 296

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 294

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6-C10	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 13:45	1
Total TPH	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 13:45	1
>C10-C28	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 13:45	1
>C28-C35	<50.0	U	50.0	mg/Kg		02/18/21 10:23	02/18/21 13:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 135	02/18/21 10:23	02/18/21 13:45	1
o-Terphenyl	85		70 - 135	02/18/21 10:23	02/18/21 13:45	1

Lab Sample ID: LCS 890-294/2-A

Matrix: Solid

Analysis Batch: 296

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 294

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C10	1000	1132		mg/Kg		113	70 - 135
Total TPH	2000	2101		mg/Kg		105	
>C10-C28	1000	969.4		mg/Kg		97	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	114		70 - 135
o-Terphenyl	102		70 - 135

Lab Sample ID: LCSD 890-294/3-A

Matrix: Solid

Analysis Batch: 296

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 294

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C6-C10	1000	1114		mg/Kg		111	70 - 135	2	25
Total TPH	2000	2088		mg/Kg		104		1	
>C10-C28	1000	974.2		mg/Kg		97	70 - 135	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	114		70 - 135
o-Terphenyl	104		70 - 135

Lab Sample ID: 890-212-1 MS

Matrix: Solid

Analysis Batch: 296

Client Sample ID: SW01

Prep Type: Total/NA

Prep Batch: 294

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C6-C10	<50.0	U	1010	946.9		mg/Kg		94	70 - 135
Total TPH	<50.0	U	2010	1745		mg/Kg		87	
>C10-C28	<50.0	U	1010	798.5		mg/Kg		79	70 - 135

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	90		70 - 135
o-Terphenyl	82		70 - 135

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## QC Sample Results

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-212-1 MSD

Matrix: Solid

Analysis Batch: 296

Client Sample ID: SW01

Prep Type: Total/NA

Prep Batch: 294

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C6-C10	<50.0	U	997	972.5		mg/Kg		98	70 - 135	3	35
Total TPH	<50.0	U	1990	1792		mg/Kg		90		3	
>C10-C28	<50.0	U	997	819.4		mg/Kg		82	70 - 135	3	35
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	104		70 - 135								
o-Terphenyl	94		70 - 135								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 890-293/1-A

Matrix: Solid

Analysis Batch: 295

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0	mg/Kg			02/18/21 11:18	1

Lab Sample ID: LCS 890-293/2-A

Matrix: Solid

Analysis Batch: 295

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	500	517.7		mg/Kg		104	90 - 110

Lab Sample ID: LCSD 890-293/3-A

Matrix: Solid

Analysis Batch: 295

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	500	517.9		mg/Kg		104	90 - 110	0	20

Lab Sample ID: 890-212-3 MS

Matrix: Solid

Analysis Batch: 295

Client Sample ID: SW03

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	19.8		501	531.8		mg/Kg		102	90 - 110

Lab Sample ID: 890-212-3 MSD

Matrix: Solid

Analysis Batch: 295

Client Sample ID: SW03

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	19.8		502	541.5		mg/Kg		104	90 - 110	2	20

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## QC Association Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## GC VOA

## Prep Batch: 291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-212-1	SW01	Total/NA	Solid	5035	
890-212-2	SW02	Total/NA	Solid	5035	
890-212-3	SW03	Total/NA	Solid	5035	
890-212-4	SW04	Total/NA	Solid	5035	
890-212-5	FS01A	Total/NA	Solid	5035	
890-212-6	FS02A	Total/NA	Solid	5035	
MB 890-291/1-A	Method Blank	Total/NA	Solid	5035	
LCS 890-291/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 890-291/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	

## Analysis Batch: 292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-212-1	SW01	Total/NA	Solid	8021B	291
890-212-2	SW02	Total/NA	Solid	8021B	291
890-212-3	SW03	Total/NA	Solid	8021B	291
890-212-4	SW04	Total/NA	Solid	8021B	291
890-212-5	FS01A	Total/NA	Solid	8021B	291
890-212-6	FS02A	Total/NA	Solid	8021B	291
MB 890-291/1-A	Method Blank	Total/NA	Solid	8021B	291
LCS 890-291/2-A	Lab Control Sample	Total/NA	Solid	8021B	291
LCSD 890-291/3-A	Lab Control Sample Dup	Total/NA	Solid	8021B	291

## GC Semi VOA

## Prep Batch: 294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-212-1	SW01	Total/NA	Solid	8015NM Prep	
890-212-2	SW02	Total/NA	Solid	8015NM Prep	
890-212-3	SW03	Total/NA	Solid	8015NM Prep	
890-212-4	SW04	Total/NA	Solid	8015NM Prep	
890-212-5	FS01A	Total/NA	Solid	8015NM Prep	
890-212-6	FS02A	Total/NA	Solid	8015NM Prep	
MB 890-294/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 890-294/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 890-294/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-212-1 MS	SW01	Total/NA	Solid	8015NM Prep	
890-212-1 MSD	SW01	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-212-1	SW01	Total/NA	Solid	8015B NM	294
890-212-2	SW02	Total/NA	Solid	8015B NM	294
890-212-3	SW03	Total/NA	Solid	8015B NM	294
890-212-4	SW04	Total/NA	Solid	8015B NM	294
890-212-5	FS01A	Total/NA	Solid	8015B NM	294
890-212-6	FS02A	Total/NA	Solid	8015B NM	294
MB 890-294/1-A	Method Blank	Total/NA	Solid	8015B NM	294
LCS 890-294/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	294
LCSD 890-294/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	294
890-212-1 MS	SW01	Total/NA	Solid	8015B NM	294
890-212-1 MSD	SW01	Total/NA	Solid	8015B NM	294

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

## HPLC/IC

## Leach Batch: 293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-212-1	SW01	Soluble	Solid	DI Leach	
890-212-2	SW02	Soluble	Solid	DI Leach	
890-212-3	SW03	Soluble	Solid	DI Leach	
890-212-4	SW04	Soluble	Solid	DI Leach	
890-212-5	FS01A	Soluble	Solid	DI Leach	
890-212-6	FS02A	Soluble	Solid	DI Leach	
MB 890-293/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 890-293/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 890-293/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-212-3 MS	SW03	Soluble	Solid	DI Leach	
890-212-3 MSD	SW03	Soluble	Solid	DI Leach	

## Analysis Batch: 295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-212-1	SW01	Soluble	Solid	300.0	293
890-212-2	SW02	Soluble	Solid	300.0	293
890-212-3	SW03	Soluble	Solid	300.0	293
890-212-4	SW04	Soluble	Solid	300.0	293
890-212-5	FS01A	Soluble	Solid	300.0	293
890-212-6	FS02A	Soluble	Solid	300.0	293
MB 890-293/1-A	Method Blank	Soluble	Solid	300.0	293
LCS 890-293/2-A	Lab Control Sample	Soluble	Solid	300.0	293
LCSD 890-293/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	293
890-212-3 MS	SW03	Soluble	Solid	300.0	293
890-212-3 MSD	SW03	Soluble	Solid	300.0	293

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Client Sample ID: SW01

Lab Sample ID: 890-212-1

Date Collected: 02/17/21 12:45

Matrix: Solid

Date Received: 02/17/21 16:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291	02/18/21 08:49	MC	XC
Total/NA	Analysis	8021B		1	292	02/18/21 18:42	PXS	XC
Total/NA	Prep	8015NM Prep			294	02/18/21 10:23	MC	XC
Total/NA	Analysis	8015B NM		1	296	02/18/21 14:43	T1S	XC
Soluble	Leach	DI Leach			293	02/18/21 10:17	MC	XC
Soluble	Analysis	300.0		1	295	02/18/21 12:43	A1S	XC

Client Sample ID: SW02

Lab Sample ID: 890-212-2

Date Collected: 02/17/21 13:00

Matrix: Solid

Date Received: 02/17/21 16:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291	02/18/21 08:49	MC	XC
Total/NA	Analysis	8021B		1	292	02/18/21 12:33	PXS	XC
Total/NA	Prep	8015NM Prep			294	02/18/21 10:23	MC	XC
Total/NA	Analysis	8015B NM		1	296	02/18/21 15:42	T1S	XC
Soluble	Leach	DI Leach			293	02/18/21 10:17	MC	XC
Soluble	Analysis	300.0		1	295	02/18/21 12:49	A1S	XC

Client Sample ID: SW03

Lab Sample ID: 890-212-3

Date Collected: 02/17/21 13:15

Matrix: Solid

Date Received: 02/17/21 16:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291	02/18/21 08:49	MC	XC
Total/NA	Analysis	8021B		1	292	02/18/21 12:56	PXS	XC
Total/NA	Prep	8015NM Prep			294	02/18/21 10:23	MC	XC
Total/NA	Analysis	8015B NM		1	296	02/18/21 16:01	T1S	XC
Soluble	Leach	DI Leach			293	02/18/21 10:17	MC	XC
Soluble	Analysis	300.0		1	295	02/18/21 12:54	A1S	XC

Client Sample ID: SW04

Lab Sample ID: 890-212-4

Date Collected: 02/17/21 13:30

Matrix: Solid

Date Received: 02/17/21 16:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291	02/18/21 08:49	MC	XC
Total/NA	Analysis	8021B		1	292	02/18/21 19:10	PXS	XC
Total/NA	Prep	8015NM Prep			294	02/18/21 10:23	MC	XC
Total/NA	Analysis	8015B NM		1	296	02/18/21 16:21	T1S	XC
Soluble	Leach	DI Leach			293	02/18/21 10:17	MC	XC
Soluble	Analysis	300.0		1	295	02/18/21 13:11	A1S	XC

Eurofins Xenco, Carlsbad

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Client Sample ID: FS01A

Lab Sample ID: 890-212-5

Date Collected: 02/17/21 13:45

Matrix: Solid

Date Received: 02/17/21 16:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291	02/18/21 08:49	MC	XC
Total/NA	Analysis	8021B		1	292	02/18/21 13:41	PXS	XC
Total/NA	Prep	8015NM Prep			294	02/18/21 10:23	MC	XC
Total/NA	Analysis	8015B NM		1	296	02/18/21 16:40	T1S	XC
Soluble	Leach	DI Leach			293	02/18/21 10:17	MC	XC
Soluble	Analysis	300.0		1	295	02/18/21 13:17	A1S	XC

Client Sample ID: FS02A

Lab Sample ID: 890-212-6

Date Collected: 02/17/21 14:00

Matrix: Solid

Date Received: 02/17/21 16:06

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			291	02/18/21 08:49	MC	XC
Total/NA	Analysis	8021B		1	292	02/18/21 14:25	PXS	XC
Total/NA	Prep	8015NM Prep			294	02/18/21 10:23	MC	XC
Total/NA	Analysis	8015B NM		1	296	02/18/21 17:19	T1S	XC
Soluble	Leach	DI Leach			293	02/18/21 10:17	MC	XC
Soluble	Analysis	300.0		1	295	02/18/21 13:34	A1S	XC

## Laboratory References:

XC = Eurofins Xenco, Carlsbad, 1089 N Canal St., Carlsbad, NM 88220, TEL (575)988-3199



Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Laboratory: Eurofins Xenco, Carlsbad

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Louisiana	NELAP	05092	06-30-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015B NM	8015NM Prep	Solid	Total TPH
8021B	5035	Solid	Total BTEX

## Method Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XC
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XC
300.0	Anions, Ion Chromatography	MCAWW	XC
5035	Closed System Purge and Trap	SW846	XC
8015NM Prep	Microextraction	SW846	XC
DI Leach	Deionized Water Leaching Procedure	ASTM	XC

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

XC = Eurofins Xenco, Carlsbad, 1089 N Canal St., Carlsbad, NM 88220, TEL (575)988-3199

Eurofins Xenco, Carlsbad

## Sample Summary

Client: WSP USA Inc.  
Project/Site: JRU 105

Job ID: 890-212-1  
SDG: TE012920138

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
890-212-1	SW01	Solid	02/17/21 12:45	02/17/21 16:06	
890-212-2	SW02	Solid	02/17/21 13:00	02/17/21 16:06	
890-212-3	SW03	Solid	02/17/21 13:15	02/17/21 16:06	
890-212-4	SW04	Solid	02/17/21 13:30	02/17/21 16:06	
890-212-5	FS01A	Solid	02/17/21 13:45	02/17/21 16:06	
890-212-6	FS02A	Solid	02/17/21 14:00	02/17/21 16:06	



Environment Testing  
Xenco

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 986-3199


## Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Dan Morris	Bill to: (if different)	Kyle C Hill
Company Name:	WSP	Company Name:	XTO Energy
Address:	3300 North A Street	Address:	3104 East Green Street
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	303 937 2406	Email:	Tacoma.Morris@xenco.com

Program: <input type="checkbox"/> UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: _____ Reporting: Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____	
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Project Name:	SEU 105	Turn Around	Pres. Code
Project Number:	TE012920138	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	
Project Location:		Due Date:	
Sampler's Name:	Spencer Lo	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			
<b>SAMPLE RECEIPT</b> Temp Blank: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Thermometer ID: 71MM-007 Samples Received Intact: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Custody Seals: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Sample Custody Seals: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Total Containers: 6 Corrected Temperature: 1.2/1.0			
Parameters			
TPH (EPA 8015)			
BTEX (EPA 8021)			
Chlorides (EPA 300)			
 890-212 Chain of Custody			
ANALYSIS REQUEST			
Preservative Codes			
None: NO DI Water: H <sub>2</sub> O Cool: Cool MeOH: Me HCL: HC HNO <sub>3</sub> : HN H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub> Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	TPH (EPA 8015)	BTEX (EPA 8021)	Chlorides (EPA 300)	Sample Comments
SWD1	S	2-17-21	1245	0-8"	C	1				Test Center: 4/30/91001
SWD2	S	2-17-21	1300	0-8"	C	1				Spill date: 8/2/2020
SWD3	S	2-17-21	1315	0-8"	C	1				Tracked ID: NEM2025312771
SWD4	S	2-17-21	1330	0-8"	C	1				
FSO1	S	2-17-21	1345	8"	C	1				
FSO2	S	2-17-21	1400	8"	C	1				

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed: TCLP/SPLP 6010: 8RCRA SB AS BA BE CD CR CO CU PB MN MO NI SE AG TI U Hg: 1631 / 245.1 / 7470 / 7471				

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Spencer	Joe Caffo	2-17-21 1400			

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-212-1

SDG Number: TE012920138

Login Number: 212

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 21422

**CONDITIONS OF APPROVAL**

Operator: XTO ENERGY, INC Building #5	6401 Holiday Hill Road Midland, TX79707	OGRID: 5380	Action Number: 21422	Action Type: C-141
OCD Reviewer chensley		Condition None		